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ENVIRONMENTAL POLITICS & POLICY

THEORIES AND EVIDENCE SECOND EDITION

JAMES P. LESTER, EDITOR

Environmental Politics and Policy

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THEORIES AND EVIDENCE *Second Edition*

James P. Lester, Editor

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Preface and Acknowledgments

This book is largely concerned with the political science literature on environmental politics and policy. The impetus for this collection stems from the fact that although much has been written in the area of environmental policy and politics from 1960 to the 1990s, very little has been done toward synthesizing and evaluating this literature, which has matured over the past thirty years or so and thus deserves careful consideration as a collective body of research. At the outset, let me also state what this book is *not.* It is not an attempt to provide a comprehensive review of *all* the extant literature on environmental policy, including work by biologists, psychologists, sociologists, economists, lawyers, and so forth. Rather, the goal is much more modest but nevertheless important, that is, to highlight work by political scientists that bears on environmental politics and policy. This book *does* synthesize and critique a rather large body of research and, in the process, suggest some promising areas for future research.

The audience for the book includes three primary groups. First, this collection is directed to both undergraduate and graduate students of environmental politics and policy. Second, it is addressed to instructors in the area of environmental politics and administration. Finally, I expect this compilation of research will provide additional insight for those currently involved in the policy formulation process, including federal, state, and local administrative personnel, as well as other interested public policy professionals.

The analytical approach used stresses the relationships between historical conditions, resource levels, mass political behavior, governmental institutions, and elite perceptions on the one hand, and environmental policy formulation on the other. It is not intended merely to provide a collection of interesting readings. Rather, my purpose in assembling this material is to explain environmental policy formulation and to suggest some promising areas for future research. For the quality of this research and the intellectual effort that has gone into making it accessible and useful, I extend my sincere gratitude to the authors of the chapters that follow.

I am also indebted to a number of individuals who, over the past fifteen years, have encouraged my work in environmental politics and policy. Walter Rosenbaum initially stimulated my interest in environmental policy when I was a doctoral student and, later, as his research associate at the Smithsonian Institution in Washington, D.C. Since that time he has been a steady source of encouragement for my efforts in this (and other) research. In addition, Dean Mann has been especially helpful as a colleague and as a source of ideas through his many writings in environmental policy. Others who have been especially helpful are (alphabetically) Ann Bowman, Charles Davis, Helen Ingram, Michael Kraft, Sheldon Kamieniecki, and Paul Sabatier. My students at Texas A&M University, the University of Oklahoma, Colorado State University, and Denver University have always been a source of encouragement and inspiration for my work in this area.

I also wish to thank Lawrence Malley, formerly director of Duke University Press, for his continued support and encouragement. Finally, the book has profited immensely from the advice of my editor, Reynolds Smith, who has carefully guided it through the first and second editions.

James P. Lester

1

Introduction

James P. Lester

Americans . . . have seldom seen environment, as such, as an expression of anything in particular. They have seldom thought of it as a general object of public policy. Their readiness to control environment for particular purposes has not been accompanied by recognition of a need for comprehensive environmental policies. —Lynton K. Caldwell, 1963

Environmental policy has come of age. It is established on the political agenda of the United States, of nearly all advanced industrial nations, and of some developing nations as well.—Dean E. Mann, 1980

Along with the renewed attention ecological issues have received in policymaking circles . . . the environmental policy studies literature has grown substantially over the past two decades, and increasingly it would appear to influence government decisionmaking, albeit in sometimes unpredictable ways.—Michael E. Kraft, 1992

In the last thirty years environmental protection policy has moved from being a "nonissue" to being one of the most significant issues of our time. Until the late 1960s there had been no clear or explicit formulation of a public responsibility for the state of the environment (Caldwell, 1970:3). However, beginning with the adoption of the National Environmental Policy Act (NEPA) of 1969, "the United States entered the decade of the nineteen seventies committed for the first time as a nation to responsibility for the quality of its environment" (Caldwell, 1970:23).[1]

Moreover, this initial commitment was sustained during the 1970s with the passage of numerous environmental laws, which regulated air contaminants such as sulfur oxides and photochemical smog, water pollutants such as dissolved organic chemicals producing lake eutrophication, and land and groundwater contamination from hazardous wastes (Mazmanian and

Morell, 1992). Table 1.1 provides a list of major federal environmental legislation from 1960 to 1992.

Given the acceptance, legitimacy, and maturity of environmental policy, it is reasonable to expect that greater attention would also be given to analyzing the process of environmental policy formulation, implementation, and impact. Indeed, the extant literature on environmental politics and policy has evolved from containing "more unanswers than a Dr. Seuss encyclopedia" (Jones, 1972:588) to a major contribution toward our accumulated knowledge of political behavior, the operation of governmental institutions, and the general process of policy formulation and implementation (Sabatier and Wandesforde-Smith, 1979:599). The scholarly literature in this area has increased enormously since the mid-1960s, with contributions from political scientists, economists, and sociologists, among others. However, it was noted some time ago that many of these disparate studies will have to be synthesized and related to the broader literature on policy making (Sabatier and Wandesforde-Smith, 1979:600). In order to make such transpolicy generalizations possible, it is necessary to organize the state of knowledge *within* policy areas.

The purpose of this book is to begin the task of synthesizing and assessing that literature on environmental politics and policy. To do so, I provide an analytical framework for identifying and discussing some of the primary determinants of environmental policy formulation. Using this framework, the contributors identify research gaps that stand in the way of our further understanding of the politics of environmental policy making.

In beginning the discussion, I review the historical development of the environmental politics literature before outlining a theoretical framework that guides the analyses in the following chapters. This literature may be divided into roughly three periods of theoretical development: (1) early literature, 1960–1977; (2) growing maturity, 1978–1985; and (3) the contemporary period, 1986–present.

Early Literature, 1960–1977

In a 1972 assessment of several environmental politics books, Charles O. Jones asserted that this literature was largely confined to overviews of the issue or of source materials, "how to do it" books, economic analyses, and "the politics of . . ." books (Jones, 1972:589). This first generation of literature was largely devoted to "consciousness raising" among those interested in environmental protection. It was a body of work that was primarily *descriptive* in nature and included such significant works as *Silent Spring* by

Table 1.1 Major Federal Environmental Legislation: A Chronology

1960	Air Quality Act
1963	Clean Air Act
1965	Solid Waste Disposal Act
1965	Water Quality Act
1966	Clean Water Restoration Act
1967	Air Quality Act
1969	National Environmental Policy Act (NEPA)
1970	Clean Air Act
1972	Consumer Product Safety Act
1972	Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
1972	Federal Water Pollution Control Act
1972	Noise Control Act
1972	Marine Protection, Research, and Sanctuaries Act
1972	Coastal Zone Management Act
1973	Endangered Species Act
1974	Safe Drinking Water Act
1974	Strip Mining Act
1976	Toxic Substances Control Act (TSCA)
1976	Resource Conservation and Recovery Act (RCRA)
1976	Solid Waste Disposal Act
1977	Clean Air Act Amendments
1977	Clean Water Act Amendments
1977	Surface Mining Control and Reclamation Act (SMCRA)
1980	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
1984	Hazardous and Solid Waste Amendments (HSWA)
1986	Safe Drinking Water Act Amendments
1986	Superfund Amendments and Reauthorization Act (SARA)
1987	Clean Water Act Reauthorization
1989	North American Wetlands Conservation Act
1990	Oil Pollution Act
1990	Pollution Prevention Act
1990	Clean Air Act Amendments
1992	Energy Policy Act

SOURCE: Council on Environmental Quality, 1979, updated by the author.

Rachel Carson, published in 1962, and *The Quiet Crisis* by Stuart Udall, published in 1963. Professors around the country were offering dire predictions about our environmental future, including *The Greening of America* (1970) by Charles Reich, *The Closing Circle* (1971) by Barry Commoner, and Paul Ehrlich's *The Population Bomb* (1968). Due largely to the efforts by these scholars, concern for the environment became so prominent that in 1972 a United Nations' conference on the human environment was held at Stockholm, Sweden (Caulfield, 1989:40–41).

However, according to Charles O. Jones, very few political scientists were represented in the literature of this era, and in general his reaction to this literature was that he was "not encouraged" by what he found (Jones, 1972:595). Jones mentioned that the few political scientists writing in this area at the time included Lynton K. Caldwell, Vincent Ostrom, Grant McConnell, Dean E. Mann, Norman Wengert, James L. Sundquist, and Phillip Foss, among others (Jones, 1972:593).[2]

A major debate during this period concerned the proper role of political scientists engaged in the study of environmental problems. According to one line of argument, political scientists should study environmental problems primarily because of the serious threats to global environmental quality. To fulfill that goal, it would be necessary to transcend and to redefine the traditional boundaries of political science as a discipline and to become knowledgeable in many other fields concerned with the environment. Moreover, political scientists should take part in the *political* struggle for a better physical environment by adopting ecological values (Lundqvist, 1978:89).

A second position argued that political scientists should take every precaution to avoid blurring the boundaries of their discipline. The main objective to studying environmental politics should be to enhance our knowledge of political phenomena. Political scientists should thus *not* spend fruitless efforts in trying to become expert environmental engineers or ecologists; rather, they should study environmental politics to draw conclusions and generalizations that would extend the discipline of political science. In doing so, political scientists should utilize *scientific* and *professional* goals and standards when studying environmental policies (Lundqvist, 1978:89). This debate characterized much of the literature during this time and would eventually shape the next generation of research, which was concerned with acquiring greater *empirical* understanding of the field.[3]

Other analysts noted that by 1973 "more political scientists [were] giving serious attention to problems arising from the spreading and worsening environmental crises" (Sprout and Sprout, 1973:192). Those who became involved at this time included Harold and Margaret Sprout, Walter Rosenbaum, Stuart Nagel, Geoffrey Wandesforde-Smith, Michael Kraft, and Lester Milbrath, among others. However, those few political scientists concerned with environmental policy making largely focused their attention on the federal government (Sabatier, 1973:218). In addition, a number of political scientists used environmental problems to illustrate longstanding theoretical issues within the profession. These included Lettie Wenner, Charles O. Jones, Matthew Holden, and Matthew Crenson. Much of the work at this time, however, was of "little explanatory import, being either largely descriptive in nature or failing to depart from and build upon the knowledge—albeit limited—of the American political system accumulated by the profession over the last few decades" (Sabatier, 1973:223).

Additional commentary on the state of the literature at this time (i.e., 1974) suggested that "it is an enormously diverse assortment of popular polemics, investigative journalism, and scholarly inquiry of varying purpose, scope, and quality" (Kraft, 1974:140). Specifically, this literature did not address the question regarding whether present institutional structures and political processes are inherently incapable of producing a satisfactory response to the accelerating deterioration of the environment (Kraft, 1974:147). Instead, the literature is too much directed toward "trivial descriptions of routine issues in contemporary environmental politics and administration, microanalyses of largely inconsequential environmental behavior, and the development of methodological sophistication in policy analysis that seems greatly to exceed the marginal payoffs of the final product" (Kraft, 1974:148).

By 1975 critics still lamented the fact that "very little research had been done by political scientists on environmental policy" (Mann et al., 1975:83). A number of areas were identified as deserving more attention at this time from political scientists. For example, analysts suggested that studies of the administration of the environment at the state level were seldom found (Sabatier, 1973; Mann et al., 1975). Moreover, "the concepts of the environmental movement [were] little investigated by political scientists in terms of relating them to broader political thought" (Mann et al., 1975:88).

In sum, this early literature was still quite underdeveloped, especially as regards the contribution of political scientists. Yet a consensus seemed to be emerging that political scientists had much to contribute to the emerging literature and that they needed to apply themselves toward building a *scientific* base of research about environmental politics. In other words, this first generation of research had contributed a great deal toward our appreciation of the environmental problem, but it had not been directed toward building a deep understanding of the empirical determinants of environmental policy making and implementation. The next generation of research would address this shortcoming in the extant research.

Growing Maturity, 1978–85

Analysts noted that by 1978 the studies on environmental politics represented "an advance over the lofty philosophical treatments of the 'enthusiastic' era, and they present a long and interesting agenda for future research" (Lundqvist, 1978:96). By this time a number of political scientists had "begun to apply and contribute to our accumulated knowledge of political behavior, the operation of governmental institutions, and the general process of policy formulation and implementation, at least in the United States" (Sabatier and Wandesforde-Smith, 1979:599). Thus, this second generation of research was *empirical* in nature (as opposed to descriptive in nature), and it sought to develop our understanding of the determinants of environmental politics and policy. Moreover, the scope of environmental concern broadened from water and air pollution and pesticide regulation to the management and control of solid wastes, ocean dumping, toxic substances, and land use planning (Mann, 1980:323). It was as if a consensus had been reached that detailed analyses of specific topics, rather than cursory overviews, were needed (Sabatier and Wandesforde-Smith, 1979:600). A new generation of political scientists became involved during this period in the study of environmental politics. They included William Ophuls, Richard Tobin, James Lester, Paul Culhane, Lennart Lundqvist, Jeanne Nienaber, David Orr, Richard N. L. Andrews, Paul Sabatier, and Daniel Mazmanian, among others. With this new generation of scholars, much attention was directed toward developing a greater understanding of federal, state, and local institutional processes of environmental policy formulation and implementation. However, while we began to acquire a deeper understanding of the empirical basis of environmental politics, we still were not fully exploring the normative implications of institutional failures in environmental policy making. That shortcoming became the basis for the third generation of environmental politics and policy literature.

The Contemporary Period, 1986–Present

In the most recent period, political scientists are turning their attention toward *normative* concerns relative to environmental politics. Many contemporary books are concerned with the "centrality of political ideas, values, ideologies, principles of governance, and political paradigms that shape the organization and operation of political systems, including the criteria by which we measure and judge their performance" (Kraft, 1992:712). This newest generation of researchers has attempted to define the nature of the environmental problematique and, on the basis of their diagnosis of the problem, *prescribe* the appropriate solution. This body of literature concentrates on "such basic questions as the nature and viability of modern industrial society, the structure of political and economic institutions and the effectiveness of their decisionmaking mechanisms, the ways in which political ideologies and paradigms affect our capacity to recognize and act on ecological problems, and how an environmental ideology or ethic might alter both personal and political decisionmaking" (Kraft, 1992:713).

Those who have contributed to this emerging literature include a number of political theorists and students of comparative and international politics, such as John Dryzek, Robert Paehlke, Joel Kassiola, David Orr, Ted Gurr, Keith Caldwell, Marvin Soroos, Oran Young, and Lester Milbrath, among others. Much of this prescriptive literature is reviewed in chapters 12 and 13 of this book.[4]

Purpose and Method

In view of the growing maturity of the environmental politics and policy literature, our purpose in this book is to synthesize and assess the political science literature as well as to suggest some promising propositions for further testing. In this way, we hope to contribute toward the further intellectual growth and development of the literature. Specifically, the goals of the book are to (1) aggregate, synthesize, and critique the political science research that has emerged over the past thirty years or so, (2) describe the state of the art vis-à-vis this literature on environmental politics and policy, (3) show that this research can be organized as a cumulative body of knowledge for use in teaching and research purposes, and, finally, (4) to identify some promising areas for future research by students of environmental politics and policy.

The empirical evidence around which the chapters revolve is an examination of the contextual, structural, and perceptual factors that shape environmental policy formulation. For example, the following questions guide the analyses presented in the following chapters:

(1) What has been done in the area each author is writing about? What is the state of the art vis-à-vis this particular body of literature?

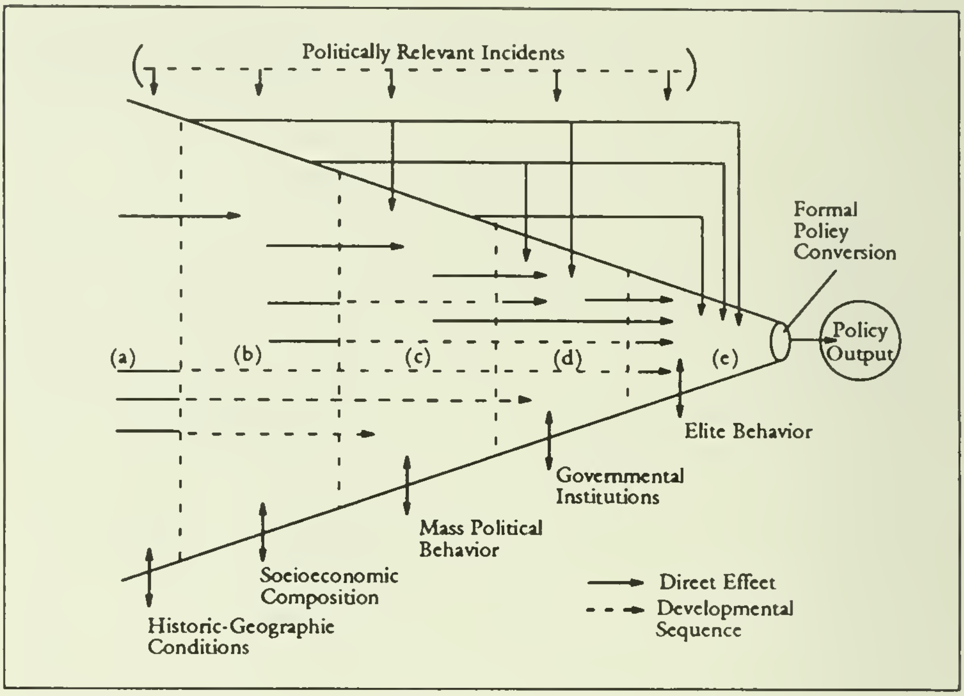

Figure 1.1 A Model for Comparative Study of Policy Formation

(2) How have important findings been changed or modified as new knowledge has developed? Can any new information be provided on the subject at hand either through a synthesis and assessment of the research or through original research?

(3) How does this body of literature contribute to theory development? What are some problems in this body of research?

(4) What is the current research agenda in this area? What are some promising areas of future research? What issues need to be addressed?

This study is not, however, concerned with purely descriptive accounts of this important topic. As students of the public policy process, we are committed to the systematic accumulation of knowledge. Thus, in the following chapters, evidence is oriented toward an explicit conceptual framework that guides the inquiry. The model for analyzing the determinants of environmental policy formulation is based on the conceptualization advanced by Richard Hofferbert (1974:228). Figure 1.1 represents his conceptualization, and it details the factors believed to promote (or inhibit) policy formation. The first sector of the model, (a), is intended to show that "history and geography are intricately woven into the actions of contemporary policy-makers" (Hofferbert, 1974:228–29). In chapter 2, attention is given to the evolution of the environmental movement as a conditioning influence on eventual policy formation. Douglas Costain and James Lester discuss the history of the conservation and environmental movements and illustrate how these movements shaped contemporary environmental policy and politics.

Although history and geography help to condition socioeconomic structures, the latter also promote or inhibit environmental policy. For example, "neighboring states, with almost similar backgrounds and resources, have developed measurably different social and economic climates that may have independent determinative effects upon the manner in which particular issues are raised and resolved within the policy-making milieu" (Hofferbert, 1974:229). In chapter 3, the issue of different socioeconomic contexts, (b), is discussed in terms of federal-state relations. Specifically, James Lester describes how reduced federal environmental aid and limited internal state capabilities are likely to cause the responses to environmental problems to vary significantly across the fifty American states. Some states are highly progressive in this sense, while others are much less so.

Mass political behavior, (c), may influence elite decisions or governmental institutions independently from socioeconomic determination (Hofferbert, 1974:230). For example, public opinion, interest groups, and political parties may (or may not) exert pressure upon elites or institutions that causes them to respond in ways that promote (or inhibit) environmental policy. In chapters 4 through 6 attention is directed toward an analysis of the role and influence of each of these factors on environmental policy. For example, Riley Dunlap discusses the evolution of public support for environmental protection over time and the correlates of that support. Next, in chapter 5, Helen Ingram, David Colnic, and Dean Mann discuss the role and influence of environmental interest groups on environmental policy. Then, in chapter 6, Sheldon Kamieniecki discusses the role and impact of political parties on environmental policy at national and state levels.

The role of governmental institutions, (d), is the focus for chapters 7 through 9. For example, Michael Kraft discusses the impact of Congress on support for environmental policy, while Walter Rosenbaum and Lettie McSpadden analyze the role and impact of the bureaucracy (especially at the federal level) and the courts, respectively, in environmental policy.

The last sector of the model, (e), prior to formal policy conversion is "elite behavior" (Hofferbert, 1974:231). Most definitions of policy formation—which include nonperception or rejection of proposed alternatives—"encompass some type of action connoting formal legality that must be attached to a policy output by the behavior of relevant elites" (Hofferbert, 1974:231). The point is that any combination of "pre-elite" factors may be operative on a given policy proposal, but elite response in some formal manner is a sine qua non of policy formation (Hofferbert, 1974:231). Attention is given to this set of factors by Mark Rushefsky in chapter 10.

Chapter 11, by Evan Ringquist, focuses on the impacts of environmental policies by discussing the extent to which our environment has improved or degraded as a result of policies formulated during the 1970s and 1980s. Chapter 12, by John Dryzek and James Lester, discusses much of the normative or prescriptive literature on environmental politics and policy. Much of the literature on environmental policy is evaluative in nature (as we discussed at the outset of this chapter) with regard to the adequacy of our existing institutions. The purpose of this chapter is to categorize this literature in terms of its policy prescriptions using a typology that is based on the locus of values and the locus of solutions embodied in the prescriptions. As such, this chapter contains a review of the reforms suggested in the literature and it also includes some predictions for the future of environmental politics and policy making.

Finally, chapter 13, by Gerald Thomas, presents a hopeful alternative to traditional environmental politics. Specifically, it describes the possibilities for "citizen empowerment," in responding to the challenges posed by environmental pollution. Both old and new forms of "participatory democracy" are emerging that could provide the basis for a new approach to environmental protection that does not rely on "politics-as-usual." This chapter also draws together some of the points made in the preceding chapters in order to assess the likelihood of occurrence of this new form of participatory politics in the future.

Notes

1 The role played by Lynton K. Caldwell in drafting the legislation for the National Environmental Policy Act (NEPA) of 1969 deserves special mention. His role in environmental policy formation is unique and illustrates a nonpartisan role by a political scientist in public affairs. Readers interested in the formulation of this act should see Caldwell, 1983.

2 The first reference by a political scientist to the concept of *environment* as contrasted to *conservation* in public policy is found in Caldwell, 1963.

3 This research collection is primarily directed toward theory development and is thus closer to the latter position; however, many of the contributors are also actively concerned with practical issues of environmental protection and support efforts to provide a better physical environment.

4 A recent example of this genre of research is Milbrath, 1990.

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PART ONE

The Historical Context

2

The Evolution of Environmentalism

W. Douglas Costain and James P. Lester

The farther backward we can look, the better we can see ahead.—Sir Winston Churchill

The evolution of environmentalism over the past one hundred years illustrates a number of important changes in the nature of public policy itself, in the nature of policy making, in the scope of the issues considered, in the level of governmental responses, and in patterns of participation. More specifically, we have witnessed an evolution from a concern over preservation of natural resources to a concern over "third-generation" environmental issues such as acid rain, global warming, and desertification. We have observed a number of policy changes (e.g., from the "wise use" of natural resources to pollution prevention and waste minimization); patterns of participation have evolved from largely an elitist style in the late 1890s to "participatory democracy" in the 1990s. Similarly, the emphasis in environmental policy making has evolved from a concern about adding environmental issues to the agenda to environmental policy implementation and evaluation. Scholars also note that innovations in environmental policy making have shifted from the national level to state and local levels in the 1980s and the 1990s (Lester and Lombard, 1990; John, 1994). Finally, scholars have noted the evolution from a concern over "environmental science" in the late 1800s to a concern over "environmental ethics" in the 1990s (Paehlke, 1989; Young, 1990).

All these changes, when taken together, suggest that the nature of environmentalism has greatly expanded over the past hundred years to include more issues, more diverse participants, greater awareness, and greater attention to the environmental issue. They also suggest a number of trends for the 1990s and beyond. If the past hundred years is a guide to the future, we argue, we should observe the emergence of "strong democracy," local activism, and significantly new approaches to dealing with environmental problems in the future (Barber, 1984; Mansbridge, 1983). Indeed, several scholars have made somewhat similar arguments (Schnaiberg, 1980; Milbrath, 1984; Goldsteen and Schorr, 1991).

The purposes of this chapter are threefold. First, we present three very different explanations of changes in American public policy over time. Next, we describe the evolutionary nature of environmentalism during the period 1890–1990, paying particular attention to changes in the scope of issues considered, the patterns of participation, the nature of public policy in this area, and the dominant concerns within each period. Finally, we attempt to explain the evolution of environmentalism by drawing on these alternative explanations of the history of American public policy. One explanation suggests that public policy in America revolves around a "policy cycle" in which we alternate between a thirty-year period of conservatism followed by a thirty-year period of liberalism (Schlesinger, 1986). An alternative explanation of policy change is offered by Paul Sabatier in which "policy learning" plays a major role (Sabatier, 1987). A third explanation suggests that American public policy follows a zigzag pattern in which different groups are offered patronage, which produces a backlash in public policy over time (Amenta and Skocpol, 1989). After evaluating the utility of these three frameworks for explaining the evolution of environmentalism, we offer some predictions about the future of environmentalism in the 1990s and beyond.

Alternative Frameworks for Analyzing Policy Change over Time

The literature suggests three major explanations for the evolution of American public policy over time. In the following sections of this paper, we discuss each of these frameworks, together with the propositions that are derived from them.

The Cyclical Thesis

The first such explanation is the "cyclical thesis" offered by Arthur Schlesinger, in which he argues that there is a continuing shift in national involvement between public purpose and private interest (Schlesinger, 1986; 1987).[1] More specifically, he argues that American politics follows a certain rhythm, in which it follows a fairly regular cyclical alternation between conservatism and liberalism in our national moods. That is, there are swings back and forth between eras when the national commitment is to private interest as the best means of meeting our national problems and eras when the national commitment is to public purpose. At roughly thirty-year intervals, Schlesinger argues, the nation turns to reform and affirmative government as the best way of dealing with our troubles. For example, Theodore Roosevelt ushered in the Progressive period in 1901, Franklin Roosevelt brought in the New Deal in the 1930s, and John Kennedy the New Frontier in the 1960s. Alternatively, Ronald Reagan ushered in a conservative era in the 1980s, which was a replay of the conservative 1950s and the Harding-Coolidge era of the 1920s.

Schlesinger claims that there is nothing mystical about the thirty-year cycle. Thirty years is the span of a generation. People tend to be formed politically by the ideals that are dominant in the years during which they attain political consciousness: roughly between their seventeenth and twenty-fifth years. When their own generation's turn in power comes thirty years later, they tend to carry forward the ideals they imbibed when young. Over time, each phase tends to run its natural course. The season of idealism and reform, when strong presidents call for active public interest in national affairs and invoke government as a means of promoting the general welfare, eventually leaves an electorate exhausted by the process and disenchanted by the results. People eventually become attuned to a "new" message that tells them that private action and self-interest in an unregulated market will solve our problems. This mood eventually runs its course as well, as problems become acute, threaten to become unmanageable, and demand remedies by governmental actors. This change in the public mood thus ushers in a new era of reform and governmental intervention.

According to Schlesinger's thesis, one major proposition about the evolution of environmentalism over the past hundred years would be the following:

> *Proposition 1:* The evolution of environmentalism follows a fairly predictable pattern in which a period of private remedies (and minimal governmental intervention) will be followed by a period of significant governmental intervention and reform. These cycles occur every thirty years.

Moreover, Schlesinger predicts that the 1990s should usher in a new era of political liberalism and governmental intervention in public policy. According to him, "shortly before or after the year 1990, there should come a sharp change in the national mood and direction—a change comparable to those bursts of innovation and reform that followed the accessions to office of Theodore Roosevelt in 1901, of Franklin Roosevelt in 1933, and of John Kennedy in 1961" (Schlesinger, 1986).

Samuel Huntington's elaboration of the cyclical model also emphasizes the power of ideas in shaping public policy and institutions (Huntington, 1981). He argues that periods of "creedal passion" or intense and widespread debate over the gap between the ideals and the actual performance of the American government lead to major bursts of institutional reform. The enactment and implementation of these reforms serve to channel and control the debate over fundamental values and ushers in an era of relative calm. In time, the shortcomings of the reforms will become increasingly obvious, triggering another period of controversy and another attempt to bring America's political system closer to its mythical ideals. Paradoxically, the reforms of one generation create the vested interests of the next generation.

The Policy-Learning Thesis

A second explanation comes from recent work by Paul A. Sabatier and his colleagues (Sabatier, 1987; Sabatier and Jenkins-Smith, 1988; 1993). They offer a conceptual framework of policy evolution and learning based on a policy subsystem of competing coalitions (mediated by policy brokers) and two broad types of variables that affect policy learning. Basically, policy change is viewed as the product of both changes in system-wide events, such as socioeconomic perturbations or outputs from other subsystems, and the striving of competing advocacy coalitions within the subsystem to realize their core beliefs over time as they seek to increase their resource bases, to respond to opportunities provided by external events, and to learn more about the policy problem(s) of interest to them (Sabatier, 1987:653). On the basis of perceptions of the adequacy of governmental units and/or the resultant impacts, as well as new information arising from search processes and external dynamics, each advocacy coalition may revise its beliefs and/or alter its strategy. The latter may involve the seeking of major institutional revisions at the collective choice level, more minor revisions at the operational level, or even going outside the subsystem, for example, by seeking changes in the dominant electoral coalition at the systemic level (Sabatier, 1987:653).

This framework has special significance for the study of policy-oriented learning, that is, relatively enduring alterations of behavioral intentions, which result from experience and which are concerned with the attainment or revision of public policy. Specifically, the framework argues that the core aspects of a governmental action program—and the relative strength of competing advocacy coalitions within a policy subsystem—will typically remain rather stable over periods of a decade or more. Major alterations in the policy core will normally be the product of changes external to the subsystem—particularly large-scale socioeconomic conditions or changes in the system-wide governing coalition. While changes in the policy core are usually the result of external perturbations, changes in the secondary aspects of a governmental action program are often the result of policy-oriented learning by various coalitions or policy brokers. Policy learning involves the feedback loops depicted in figure 2.1, as well as increased knowledge of the state of the problem and the factors affecting them. Figure 2.1 presents this framework and the factors that condition public policy change over time.

> *Proposition 2:* The evolution of environmentalism is explained by an extended period of policy change in which governmental actors repeatedly revise policy on the basis of "policy learning" brought on by events external to subsystem politics. More specifically:
>
> Proposition 2a: Policy-oriented learning across belief systems is most likely when there is an intermediate level of informed conflict between the two. This requires that (a) each have the technical resources to engage in such a debate, and (b) the conflict be between secondary aspects of one belief system and core elements of the other or, alternatively, between important secondary aspects of the two belief systems.
>
> Proposition 2b: Policy-oriented learning across belief systems is most likely when there exists a forum that is (a) prestigious enough to force professionals from different coalitions to participate and (b) dominated by professional norms.

The Backlash or Zigzag Thesis

Still another explanation of changes in public policy over time comes from the work of Edwin Amenta and Theda Skocpol (1989). They argue that there is an erratic pattern in the history of American public policies, which is characterized by a "zigzag effect" or a stimulus and response (or backlash). The pattern shows not so much a shift from liberal to conservative as from policy that first benefits one group, then another, as a backlash

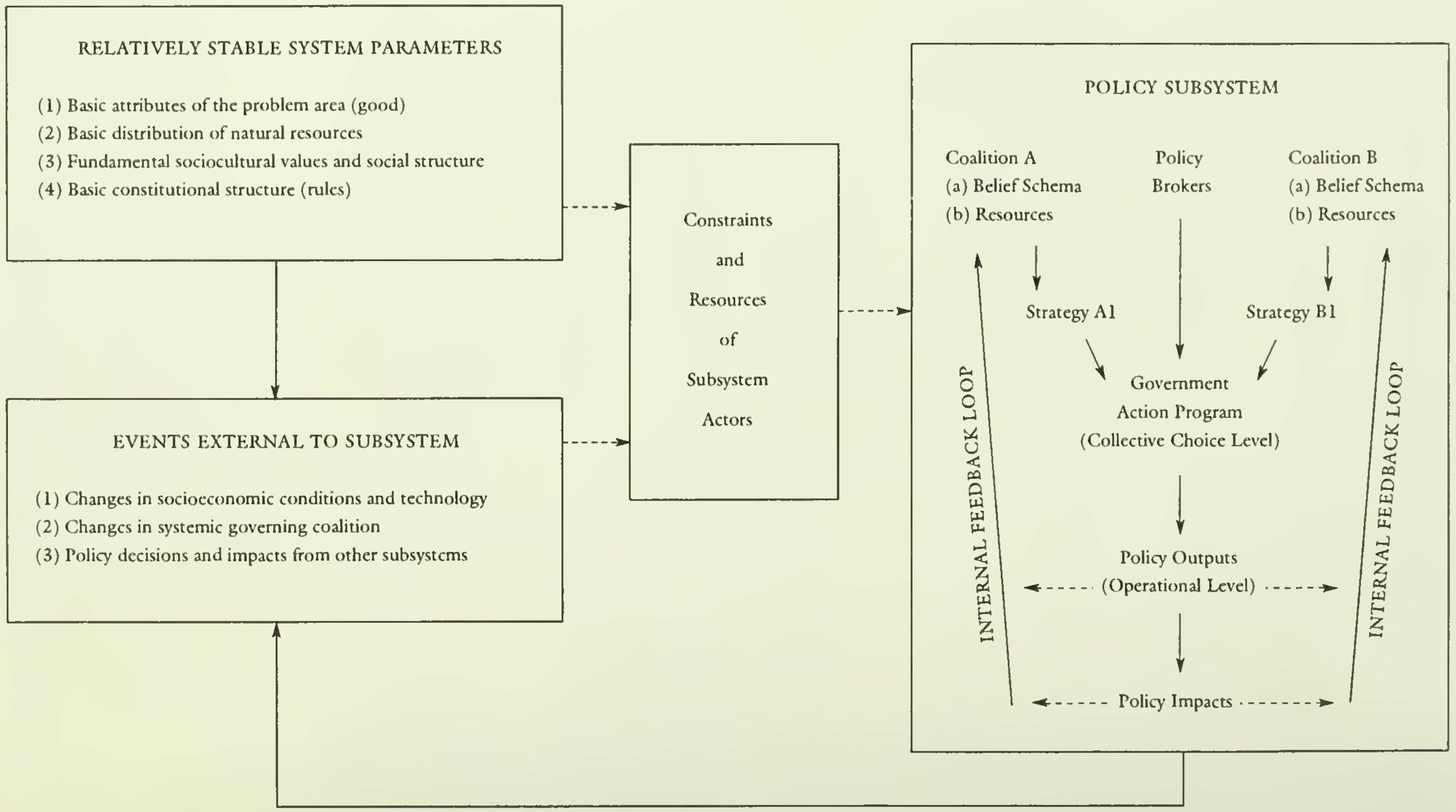
RELATIVELY STABLE SYSTEM PARAMETERS
(1) Basic attributes of the problem area (good)
(2) Basic distribution of natural resources
(3) Fundamental sociocultural values and social structure
(4) Basic constitutional structure (rules)
EVENTS EXTERNAL TO SUBSYSTEM
(1) Changes in socioeconomic conditions and technology
(2) Changes in systemic governing coalition
(3) Policy decisions and impacts from other subsystems
Constraints and Resources of Subsystem Actors
POLICY SUBSYSTEM
Coalition A
(a) Belief Schema
(b) Resources
Policy Brokers
Coalition B
(a) Belief Schema
(b) Resources
Strategy A1
Strategy B1
Government Action Program (Collective Choice Level)
Policy Outputs (Operational Level)
Policy Impacts
INTERNAL FEEDBACK LOOP
INTERNAL FEEDBACK LOOP

Figure 2.1 General Overview of the Conceptual Framework of Policy Change. Source: Sabatier 1987.

to the first group. The concept of "class struggle" or competing societal coalitions comes to mind as a useful way to explain the above shifts. For example, the late nineteenth century was characterized by high levels of spending notable for their distributive character and patronage for *white men*. Specifically, it was devised by the "radical Republicans" and included the Civil War pension system, in which benefits were distributed in a partisan way. It went to Northerners who could make a plausible case for their role in preserving the Union. Thus, for Republicans, political affiliation was a major criterion for the pension. This led to a backlash among the Democrats against the "radical Republicans" in the Southern states, which persists to this day. There were also federal jobs for those with suitable party connections. The federal bureaucracy could then be seen as largely an employment program for the "right people" (that is, northern and midwestern Republicans).

This backlash was followed by the Progressive era (1900–1930), in which there was an attempt to eliminate political machines and patronage from the previous period. Civil service reforms, including the merit hiring system, were instituted. There was a movement away from direct election of administrative officials. Child labor laws and legislation limiting women's working hours were enacted. A variety of public health and safety laws were passed, as was workmen's compensation. Gradually, Democrats became more powerful, because of their southern and western bases of support. Individual and corporate income taxes were established. Democrats became known as the reform party because they attempted to replace radical Republicans with their own members. By the end of the 1920s, Democrats allied with the labor movement and threw their support behind social spending. Essentially, the Democrats established themselves as a "social democratic" party at this time.

This was followed by the New Deal period, 1930–1950, in which many of the social insurance programs and welfare programs were enacted. These initiatives were propelled by the Great Depression, and Democrats continued their domination of the public policy debate. Legislation included the 1935 Social Security Act (the centerpiece of the New Deal). According to this model, we adopted Keynesian economics and used direct intervention in the economy and the federal government as an agency for massive redistribution of wealth through the creation of large social-spending programs. Politically, this encouraged deficit spending and not balanced budgets. As for social-spending policy, veterans of World War II and retired veterans of wage-earning employment and their survivors were advantaged relative to other social groups.

Finally, the authors see a postwar period, the 1950s–1980s, in which there was a reaction to the free-spending of the previous period of Democratic administrations. In particular, the "new federalism" of the 1970s–1980s represented a backlash against large federal welfare programs. Later cuts deeply reduced the growth in Great Society programs enacted in the late 1960s. Economic policies of the postwar period relied on fiscal stimulation rather than New Deal liberalism (for example, tax reduction rather than spending programs to stimulate the economy). There were heavy investments in military spending (jobs in the military have been the counterpart to employment in the civilian bureaucracy in the late nineteenth century). Patronage existed in terms of military employment and old age assistance. This framework finds, in effect, that policies in the postwar period are very similar to those in the first period of the late nineteenth century.

Thus, the arguments presented above by Amenta and Skocpol suggest that there is an erratic pattern in the history of American public policies: a zigzag effect or a stimulus and response (backlash), which is a shift not so much from liberal to conservative as from a policy that benefits one group, then another, as a backlash to the first group. The following proposition is derived from their argument:

> *Proposition 3:* The evolution of environmentalism during the period from 1890 to 1990 is best explained by a "zigzag pattern" in which the environmental policies of one era provide the stimulus for a reaction in the next era. Thus, policies undergo drastic changes as a reaction to a previous policy: policies that favor one group (e.g., the preservationists) in one era are replaced by policies that favor other groups (e.g., the corporate sector) in the next era.

These three propositions are offered to explain the evolution of environmental policies in the United States during the period from 1890 to 1990. In the following two sections, we describe the evolution of environmental policies during this period and then examine the extent to which any (or all) of these frameworks explain this phenomenon.

The Evolution of Environmentalism, 1890–1990

The history of environmental politics and policy may be roughly divided into four periods: the "conservation-efficiency movement" from about 1890 to 1920; the "conservation-preservation movement" from about 1920 to 1960; the "environmental movement" from about 1960 to 1980; and the contemporary period of "participatory environmentalism" starting in the 1980s (Hays, 1959; Schnaiberg, 1980; Caulfield, 1989).[2] However, we can identify earlier attempts to protect the environment as well. For example, during the first part of the nineteenth century, the federal government took a number of actions to preserve good mast timber for ships, and President John Quincy Adams even went so far as to establish a program of sustained yield operations on some forest reservations in 1827 (Englebert, 1961). However, there was not really much effort for environmental protection until after the Civil War. With the exception of the John Quincy Adams administration, no other presidential administration from Washington to Buchanan revealed any foresight in planning for the nation's future natural resource needs (Englebert, 1961). Essentially, the years between 1865 and 1890 may be characterized as a period of resource exploitation by a rising industry, during which time natural resources were subordinated to the political objectives of industrial development, homestead settlement, and the promotion of free enterprise (Englebert, 1961). During the Reconstruction era after the Civil War, it was necessary to rebuild the South and develop the West, both of which required the use of resources rather than their conservation. Nevertheless, by the late 1800s, serious efforts began to protect the nation's natural resources.

The Conservation-Efficiency Movement, 1890–1920: Elitism in Policy Making

The years from 1890 until 1920 saw some of the nation's most bitter conservation battles as Republicans and Democrats began to take firm positions on the environment. The essence of the "conservation movement" was rational planning *by government* to promote efficient development and use of all natural resources (Hays, 1959:2). According to historian Samuel P. Hays, "[T]he modern American conservation movement grew out of the firsthand experience of federal administrators and political leaders with problems of Western economic growth, especially Western water development" (Hays, 1959:5). Later, federal forestry officials joined hydrographers and campaigned for more rational and efficient use of timber resources. During the 1890s, the organized forestry movement in the United States shifted its emphasis from saving trees to promoting sustained-yield forest management (Hays, 1961). By 1891, the executive branch took the lead to set aside "forest reserves" within the federal domain and to authorize selective cutting and marketing of timber in 1897 (Caulfield, 1989).

A number of individuals, including W. J. McGee, Gifford Pinchot, John

Wesley Powell, Frederick Newell, George Maxwell, and others were concerned about the short-sighted commercial exploitation of the nation's natural resources. Many were employed by the federal government in the late 1800s, especially for the U.S. Geological Survey. Together, they formulated four basic doctrines for what later became the creed of the conservation movement: (1) conservation is not the locking-up of resources—it is their development and wise use; (2) conservation is the greatest good for the greatest number for the longest time; (3) the federal public lands belong to all the people; and (4) comprehensive, multiple-purpose river basin planning and development should be utilized with respect to the nation's water resources (Caulfield, 1989).

Gifford Pinchot became an important link between the intellectual and scientific founders of the conservation movement and President Theodore Roosevelt, a Republican. Indeed, the Roosevelt administration is as noteworthy for the drive and support it gave the conservation movement as it is for the initiation of new policies or legislative enactments. A new spirit of law enforcement pervaded the once-corrupt land management departments and were dramatized to the country at large by the influence of Gifford Pinchot and his role as adviser to President Roosevelt (Englebert, 1961). Under Pinchot's guidance, the Roosevelt administration greatly enlarged the area of the national forests from 41 to 159 reserves (Hays, 1959). Pinchot, who studied forest management in France and Germany, completely reorganized the Forest Service and infused it with a new spirit of public responsibility (Hays, 1959).

The period 1908–1920 saw numerous conflicts over conservation policy. For example, much of the Western livestock industry depended for its forage upon the "open range" owned by the federal government but free for anyone to use. Soon the public domain became stocked with more animals than the range could support. Chaos, violence, and destruction of property were typical of the times. Range wars soon developed between Western cattlemen and sheep operators, on the one hand, and both groups and farmers, on the other, as all struggled for control of the public grazing lands (Hays, 1959).

Nevertheless, the deepest significance of the conservation movement, according to Samuel Hays, "lay in its political implications: how should resource decisions be made and by whom?" Should conflicts be resolved through partisan politics, by compromise among various interest groups, or through the courts (Hays, 1959)? To the conservationists, politics was an anathema; instead, scientific experts, using technical and scientific methods, should decide all matters of development and use of natural resources, together with the allocation of public funds (Hays, 1959). The crux of the gospel of efficiency, then, "lay in a rational and scientific method of making basic technological decisions through a single, central authority" (Hays, 1959). The inevitable tension that developed between those grassroots interests and the technocratic elites of this conservation-efficiency era raised a question that was to be addressed by future conservationists—how can large-scale government programs be effective and at the same time accommodate significant grassroots participation?

The Conservation-Preservation Movement, 1920–1960: The Growth of Subgovernments

The second form of conservationism, the preservationist movement, was very similar to the efficiency movement, except that this movement was more concerned with *habitat* than sustenance (Englebert, 1961). That is, the preservationist movement developed largely under the pressures of increased leisure and affluence and the growth of outdoor recreation. It drew its support from the upper middle class and also from hunting and fishing groups drawn from the working classes. Although there were conflicts over natural resource policy, they were largely confined to struggles between those who favored "multiple use" of public lands and those who favored "pure preservation" (Schnaiberg, 1980:386). While the earlier movement was often characterized by conflicts between extractive industries in the West and manufacturing industries in the East, the preservationist movement often included capitalist sponsors, like Laurance Rockefeller, who facilitated the preservation of major tracts of land surrounding the hotels that he built (Schnaiberg, 1980).

Beginning in 1920, water power, coal, flood control, and even wildlife were given special attention in the major party platforms. Much of the emphasis on natural resources was shifted from conservation of public lands to programs of conservation under private ownership (Englebert, 1961). Another major difference between these two movements was that conservation-efficiency concerns resided with corporations and national and state agencies, while conservation-preservationist concerns resided in local and especially national voluntary organizations, like the Sierra Club, the National Wildlife Federation, and the Wilderness Society.

The period from 1921 to 1950 took on a different look since much of the federal legislation for natural resources became associated with broad social and economic objectives like the Agricultural Adjustment Act of 1938, which was passed to control agricultural production. Similarly, the job-creating agencies of the New Deal often undertook major environmental protection responsibilities. The Civilian Conservation Corps (CCC) planted millions of trees in the Dust Bowl states as well as upgrading many of the national parks. The legislative history of environmental and natural resource issues suggests that Congressional Democrats attained a much better voting record than their Republican counterparts during the period 1921–1950 (Englebert, 1961). By the 1960s, however, the movement began to change dramatically as environmental concern was broadened to include many new issues involving groups that had previously been inactive.

The Environmental Movement, 1960–1980: Pluralism in Policy Making

One prominent scholar of environmental politics argues that the conservation movement was an effort on the part of leaders in science, technology, and government to bring about more efficient development of natural resources, while the environmental movement was a product of a fundamental change in public values in the United States that stressed the quality of the human environment (Hays, 1959). The environmental movement, in contrast to the conservation movement, is more typically viewed as a grassroots or "bottom-up" phenomenon, in which environmental objectives arose out of deep-seated changes in values about the use of nature. Conservation, on the other hand, is viewed as a "top-down" phenomenon, in which technical and political leaders were stirred toward action. Essentially, the environmental movement integrated the habitat and sustainability concerns of the efficiency and preservation movements, but it also covered a broader set of ecosystem concerns (Schnaiberg, 1980). There were new concerns about the relationship between social welfare issues, growth management, and who would decide on the expansion of production.

The environmental movement can also be characterized by the breadth of its constituency, as well as its strategies for political influence. For example, groups within the environmental movement used lobbying, litigation, the media, electoral politics, and even civil disobedience, in contrast to the more conventional mechanisms used by the conservationists, such as technical negotiations, corporate sponsors, and small pressure groups (Schnaiberg, 1980).

Finally, the base of support for the environmental movement was made up of a larger sector of the public, including the middle and working classes. Such broad support attracted the attention of entrepreneurial politicians seeking to attach themselves to popular causes. With the decline of strong programmatic national parties, ad hoc coalitions of opportunistic politicians advanced the issues of the movement. This transitory support became institutionalized in the laws and regulations that were administered by new agencies like the Environmental Protection Agency (EPA). The media and the ambitious politicians would move on to newer topics, but the environmental groups and the civil servants were firmly rooted in "issue networks" and "policy communities."

The Contemporary Period, 1980–1990: Toward Strong Democracy and the Environmental Movement

Some of the most recent literature describes a shift toward direct action and a turning away from "representative democracy" toward "participatory democracy" (Goldsteen and Schorr, 1991). Others describe contemporary environmental politics in terms of "advocacy coalitions," in which groups from federal, state, and local levels form coalitions for the purpose of supporting or opposing major environmental issues (Sabatier and Jenkins-Smith, 1988; 1993).

Still others argue that we are evolving toward "postenvironmentalism" in which we adopt environmentally sound methods of industrial production, solar technology, recycling, soft transport technology, and sustainable agriculture (Young, 1990). Table 2.1 describes some of the more salient characteristics of each era of the environmental movement from 1890 to 1990.

Explaining Environmental Policy Change over Time

In this section we provide data that is suggestive rather than definitive to "test" the three models of policy change.[3] Table 2.2 provides a composite of several collections of environmental laws. Table 2.2 does not show the striking cycles of government activity that Schlesinger seems to predict. The New Deal era does show an upsurge in new laws as expected, but there is even more legislative activity in the supposedly quiet 1970s and 1980s. Moreover, it is equally difficult to argue that the *substance* or content of recent laws are minor or less significant than those passed in times presided over by activist presidents. Supporters and critics alike concur that the environmental laws passed in the past two decades are of unprecedented scope and impact on the nation. (Whether these expensive actions are effective in addressing their problem area is another question.)

The other two frameworks are less clearly reflected in this evidence. Spe-

Table 2.1 The Evolution of Environmentalism, 1890–1990.

	1890–1920	1920–1960	1960–1980	1980–1990
Scope of the Issues	Preservation issues	Conservation issues	2d-generation issues	3d-generation issues
Dominant Policy	Efficient use of resources	Multiple use of resources	Pollution abatement	Pollution prevention
Patterns of Participation	Elite-dominated	Sub-governments	Pluralism	Advocacy coalitions
Policy Cycle Stage	Preproblem stage	Agenda-setting stage	Policy formation	Policy implementation
Level of Action	National government	National government	National government	State and local governments
Dominant Concern	Environmental science	Technology development	Economics and politics	Philosophy and environmental ethics
Techniques of Power	Technical negotiations	Corporate pressure	Middle-class politics	Participatory democracy

SOURCE: Compiled by the authors.

cialists in particular environmental policies can track the evolution of air or water pollution laws over time, but aggregating expert judgments across the range of environmental laws does not clearly refute either the "policy-learning" or the "zigzag" model.

The early emphasis on laws regulating public lands and hunting and fishing has given way to a much broader array of antipollution and preservationist legislation in recent decades. At the same time there is a historic continuity between the wilderness and endangered species laws of the 1970s and 1980s and the forest reserves and wildlife refuge laws of ninety years earlier.

The zigs and zags of policy are obvious in the analysis of who benefits from the dominant thrust of the laws. The single unambiguous trend is away from unlimited private consumptive uses of "public goods," whether they are national forests or air. The debate now is about which social groups benefit and lose from this redistribution, with conservatives arguing that the upper class and environmental activists are the winners, while the poor are the losers.

Even this limited generalization is difficult to sustain when we turn to

Sabatier's model. Clearly the number and composition of the advocacy coalitions at work in this policy arena have grown over the decades. There is also evidence that external events impact policies, namely, the arrival of two waves of social movements, the progressive and the environmental, and in addition, the New Deal—and its stimulus, the Depression.

Turning now to table 2.3, we see an approximation of the eras when particular types of groups appear. It provides some further evidence of the evolution of this issue area. Early on, both preservationist and hunting and fishing groups emerge and are visible participants in the policy debates of the period. There is, however, a vast gulf between the two categories of groups. Audubon and Sierra were minuscule in contrast to the mass membership sportsmen's clubs, but their members were unusually well connected to the nation's political and economic elites, so they exercised an influence far out of proportion to their size.

Table 2.2 New National Laws for the Environment, 1890–1990.

Decade	Number of Laws	Examples
1890s	4	Forest Reserve Act (1891) River and Harbor Act (1899)
1900s	2	Lacey Act (enforcing state hunting laws) (1900) Reclamation Act/Newlands Act (1902)
1910s	3	National Park Service Act (1916) Migratory Bird Treaty (1918)
1920s	5	Mineral Leasing Act (1920) Oil Pollution Control Act (1924)
1930s	7	Civilian Conservation Corps (CCC) Act; Tennessee Valley Authority (TVA) Act (1933) Taylor Grazing Act (1934)
1940s	1	Federal Water Pollution Control Act (1948)
1950s	1	Water Pollution Control Act (1956)
1960s	7	Multiple Use Sustained Yield Act (1960) Wilderness Act (1964)
1970s	17	National Environmental Policy Act (NEPA) (1969) Clean Air Act and Amendments (1970, 1977)
1980s	12	CERCLA (Superfund) (1980, 1986) Clean Air Act Amendments (1990)

SOURCE: Compiled by the authors from a variety of sources, especially Nash 1990: xi–xix.

Table 2.3 New National Environmental Organizations, 1890–1990.

Decade	Number of New Groups	Examples
1890s	2	Sierra Club (1892) American Scenic and Historic Preservation Society (1895)
1900s	2	National Audubon Society (1905) National Conservation Association (1909)
1910s	3	American Game Protective and Propagation Association (1911) Save the Redwoods League (1918)
1920s	1	Izaak Walton League (1922)
1930s	2	Wilderness Society (1935) National Wildlife Federation (1936)
1940s	1	Soil Conservation Society (1944)
1950s	1	Nature Conservancy (1951)
1960s	3	Environmental Defense Fund (1967) Friends of the Earth (1969)
1970s	3	Natural Resources Defense Council (1970) League of Conservation Voters (1972)
1980s	1[a]	Earth First! (1981)

This table is illustrative of the emergence of groups during particular eras, rather than a precise count of the number of groups.

[a] There are also numerous specialized national groups as well as alliances of state and local groups.

SOURCE: Compiled by the authors.

The groups that were founded during the environmental era were deliberately focused on using the political system to advance environmental protection. They were also membership groups, relying on a broad base of members and donors to fund their advocacy, as well as soliciting larger grants from foundations. The universe of environmental groups has grown to encompass a vast range of organizations from the sedate real estate brokers in the Nature Conservancy to the theatrical rhetoric of Earth First!

The sheer size and diversity of the groups makes the zigzag model less credible since new participants often carve out new niches rather than directly compete with older groups. Moreover, this variety also suggests an expansion of the issue area with established issues and groups coexisting with emerging groups and subjects. While there are definitely eras when new groups form, like the late 1960s, and other periods of few births, like the 1950s, there is not a direct correspondence between Schlesinger's cycles of government initiative and the formation of new groups.

Even the focus of new groups may not match the new agenda of the government, as the anomalous appearance of the Wilderness Society during the peak of the New Deal suggests. Sabatier's model pays careful attention to the actual participation of groups in the making of policy, a perspective that this simple table cannot begin to reflect. It is worth noting, however, that scholars examining the impact of the environmental movement on policy have pointed to the late 1960s and early 1970s as the time when old and new environmentalists were able to break into the closed circles of policy making (Culhane, 1981). This was also the time when there was an influx of new groups and a revitalization of existing organizations.

Table 2.4 summarizes the coverage of environmental topics in the *New York Times Index* over the full hundred-year period. The subjects of this coverage during the first three decades were our "animals/fish and hunting" and "public lands/forests" categories. Although it is common for scholars today to speak of this as a time of the conservation or progressive conservation movement, the *Times* had very few stories indexed under that term. The overall low level of environmental coverage supports the common generalization that these issues were of concern to a small elite rather than to the broader public. The contrast between the attention given to environmental topics in the past thirty years and that of prior decades is

Table 2.4 *New York Times Index,* Space on Environmental Topics, 1890–1990.

Decade	Average Column Inches per Year
1890s	3.1
1900s	13.5
1910s	12.6
1920s	36.5
1930s	42.9
1940s	40.1
1950s	110.3
1960s	284.5
1970s	944.7
1980s	688.9

Inches are standardized to reflect varying type fonts and column widths.

SOURCE: Calculated by the authors.

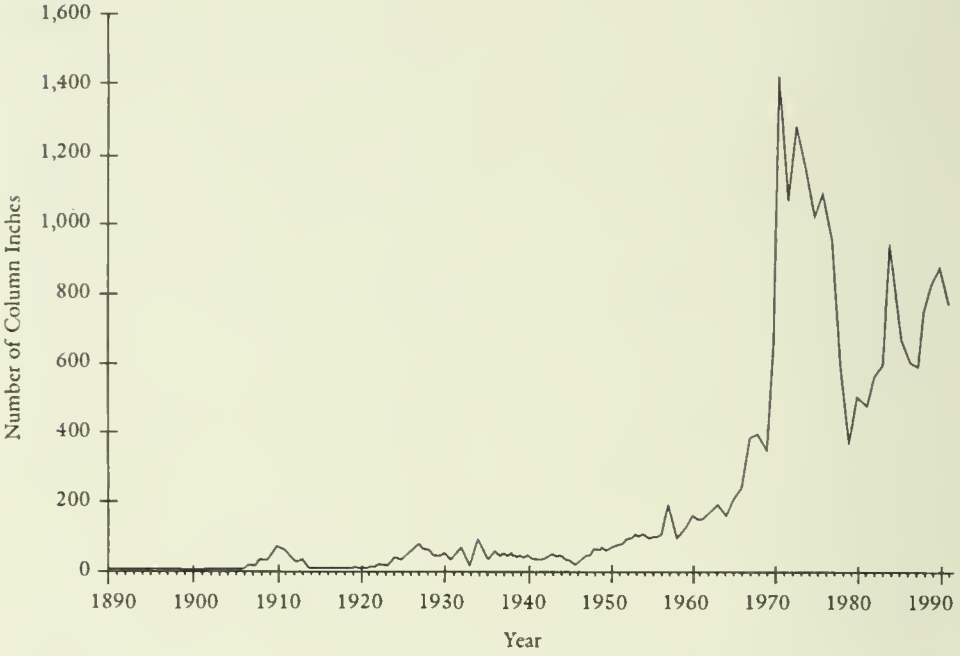

Figure 2.2 Environmental Topics in the *New York Times Index*, 1890–1990

very striking. Clearly, the media has played a major role in making the environment a middle-class issue.

As was evident in our summary of environmental laws and organizations, the range of subjects within this arena has expanded greatly. Air and water pollution began to be covered during the 1930s, but these concerns would not surpass the old focus on animals and forests until the 1950s. Pollution of the air and water continue into the 1990s as the dominant environmental topics in the index.

This same data is displayed in figures 2.2, 2.3, and 2.4 for each year rather than each decade of news coverage. Given the disparity between the space given to the environment in recent decades and what was given in the early part of the century, we will focus our analysis on figures 2.3 and 2.4.

At first glance, figure 2.3, with its attention to the years prior to 1960, shows signs of Schlesinger's cycles. Indeed, the 1905–1915 peak in news coverage coincides with the height of the Progressive initiatives. Unfortunately, the next cycles are perversely the opposite of the prediction. Media attention to environmental topics booms during the 1920s, as well as the 1930s, and it grows even more rapidly during the 1950s, when few groups were active and few laws were being passed. In figure 2.4, it is the Nixon and Ford presidencies that overlap with the greatest period of news cov-

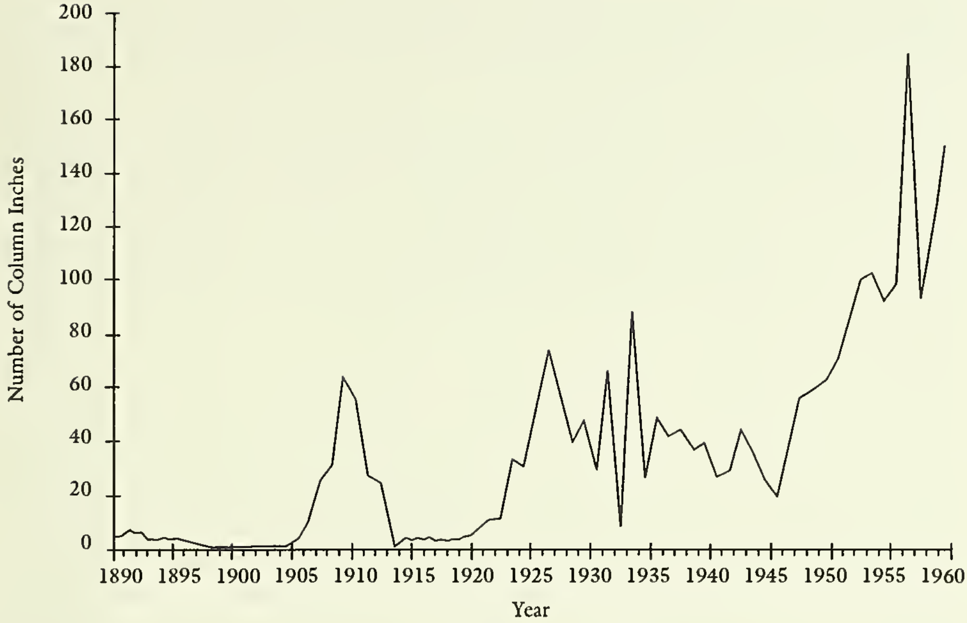

Figure 2.3 Environmental Topics in the *New York Times Index*, 1890–1959

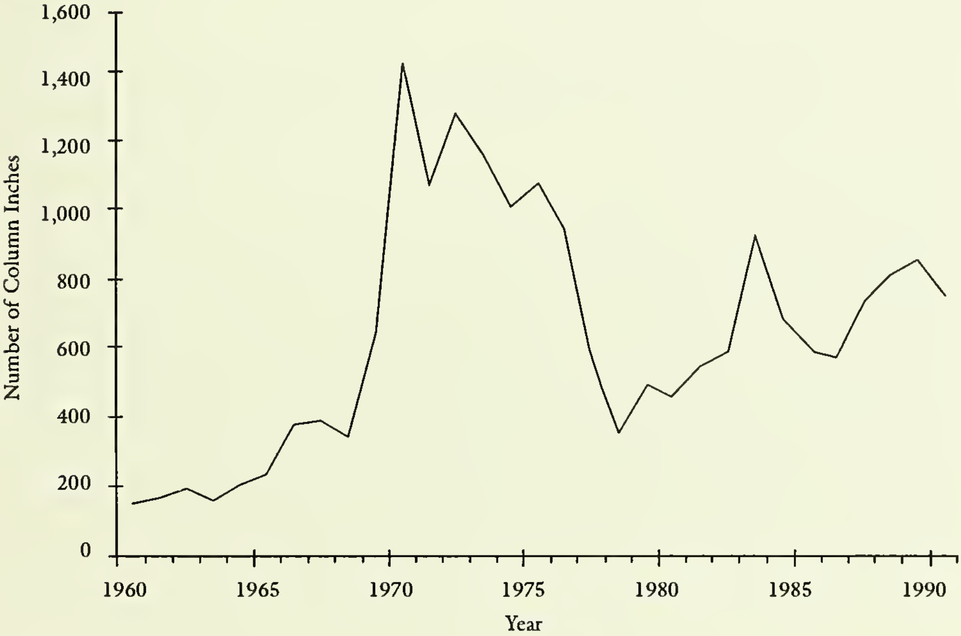

Figure 2.4 Environmental Topics in the *New York Times Index*, 1960–1990

erage of environmental topics. Again this is not the cycle that is expected. (It should be noted that Huntington [1981] focuses his analysis on similarities between the Progressive era and the decade from the mid-sixties to the mid-seventies. His concern for the passions stirred by new movements and their impact on government is more consistent with our limited evidence.)

Although we did not analyze the substance of the news stories in the index, thus limiting our "test" of the zigzag model, we did not find old subjects disappearing as new ones emerged. Instead, topics such as hunting and forestry continued to be covered, while other subjects got much more space.

The simple measure of space allotted to each subject also constrains our analysis of the policy-learning model. Certainly, the increased complexity of the once-narrow issue area and its scrutiny by the media is within Sabatier's framework. Since journalists often define news worth covering in terms of conflict and controversy, it is not surprising that the eras of policy change, such as the early 1970s, are also extensively followed by the *Times*. Events external to the policy subsystem are key impetuses to policy change in this model, and media attention transmits, as well as creates, such external pressure. Increased media coverage in the otherwise tranquil 1950s may have been the harbinger of the policy innovations of the early 1970s. The longer time series allows us to see the gradual building of concern a decade *before* the explosion of activity in the late 1960s.

Conclusions and Suggestions for Further Research

From this brief history of the environmental movement, several observations may be drawn. First, we see how the environmental movement has steadily broadened its base of support over the past one hundred years from 1890 to 1990. Specifically, it has moved from being largely an elitist concern, involving scientific and government experts, to one with broad-based support including middle-class and even working-class supporters. This broader base of public support has been joined by national environmental groups, ranging from the National Wildlife Federation to the Sierra Club, the Natural Resources Defense Council, Friends of the Earth, Greenpeace, and Earth First! This tendency toward "opening up" the issue to greater and more representative participation is also illustrated by the literature that seeks to explain the formulation or implementation of environmental policy. Initially, this literature stressed "subgovernments" as a major explanation for environmental policy making (Foss, 1960). More recently, it suggests that "advocacy coalitions," composed of interests from all three levels of government and the private sector, are now involved in making policy (Sabatier and Jenkins-Smith, 1988; 1993). Clearly, this suggests a change in the scope of citizen involvement over the past hundred years.

There have also been a number of other changes in the nature of environmental policy and politics over the last few decades. For example, in the last thirty years we have changed how we evaluate the severity of the environmental problem. We have evolved from a primary concern over "natural resource issues" to "environmental issues," or from first-generation problems (e.g., public lands, irrigation, water rights, and park management) to second-generation problems (e.g., toxic waste, groundwater protection, and air pollution) to third-generation problems (e.g., global warming, thinning of the ozone layer, tropical deforestation, and acid rain). Along with this change, we have shifted our concern from purely localized issues involving air and water pollution in communities to the realization that an effective response to these second- and third-generation problems "requires diverse actions by individuals and institutions at all levels of society" (Vig and Kraft, 1990:4).

Moreover, the nature of public opinion on this topic has changed dramatically over the past thirty years. Initially, in the late 1960s and early 1970s public support reached a high level, but it was judged to be "soft support," meaning that it would dissolve in the face of concerns over economic development (or jobs over the environment). In the late 1980s, on the other hand, public opinion was said to be both strong and salient (Mitchell, 1990; Dunlap, 1995). The American public now indicates that it wants stringent environmental protection regulations and is willing to pay for it in new taxes.

Finally, we have witnessed the growing involvement of states and cities and grassroots organizations in environmental management (John, 1994; Lowry, 1992; Ringquist, 1993; Ingram et al., 1995). With the advent of "New Federalism" in the 1970s and 1980s, states and communities are increasingly being asked to assume more of their environmental responsibilities, which were previously handled by the federal government. Yet it is also clear that not all the states are able to muster the economic and institutional wherewithal to meet their new responsibilities (Lester, 1986; Davis and Lester, 1987; Lowry, 1992; Ringquist, 1993; Lester, 1994). Indeed, the states vary greatly in terms of their capacities to assume environmental management in the 1990s.

There are several implications that can be derived from the discussion above. First, if the present trend continues, then the next century (or perhaps even earlier) should be characterized by significantly increased levels of citizen activism or "strong democracy" in the environmental movement. It is likely to be a new era in environmentalism in which we significantly change the nature of our approach to environmental protection by moving toward "postenvironmentalism," as described by John Young and others (Young, 1990). Increasingly, localism will likely characterize environmentalism as salons, "study circles," neighborhood groups, and state- and city-wide organizations become even more important in affecting the direction and scope of environmental protection (Dryzek, 1989; Lester and Castensson, 1990; John, 1994).

Second, the environmental movement is increasingly a global one, as new local groups join the ranks of national and international organizations (Nagchaudhuri and Bhatt, 1987; Carroll, 1988; McCormick, 1989; Caldwell, 1984). Many domestic and global groups, such as Greenpeace, have begun to mobilize Third World peoples *against* their own governments' development projects. Thus, we have witnessed the development of "cross-level and cross-national" grassroots environmental movements in the last twenty years.

Finally, our argument is that the patterns described above over the past one hundred years suggest an expansion of the environmental movement from elitism to participatory democracy. While the contemporary situation does not embody all the elements of "strong democracy," as described by Mansbridge (1983) and Barber (1984), it does nevertheless suggest an evolution over time toward that end. Future research may wish to question, verify, or rebut this argument. Certainly, the evolution of the environmental movement could be probed more deeply. An obvious area for future research is the extent to which these three theories of policy change account for the evolution of the environmental movement from its inception to the present time.

In addition, several questions remain and could provide the basis for much research in the future:

1. To what extent was the environmental movement shaped from above? That is, is the environmental movement an elitist phenomenon, or has it been shaped from below (i.e., the grass roots)?

2. How is the environmental movement different from, or similar to, other movements, such as the civil rights movement, and/or the peace movement?

3. Are we moving toward "participatory democracy" as far as the environmental movement is concerned? To what extent can the past predict the future, or the most likely scenario?

4. What trends can be identified in the evolution of the environmental movement from its inception to the present?

5. Do the phenomena of political movements represent a societal effort to express and realize in public policy a more general public interest (Caulfield, 1989)? In other words, may movements be viewed as necessary precursors to policy change?

Notes

1 Similar arguments have been made by Burnham (1970) and Huntington (1981).

2 Not all scholars are in agreement with regard to the exact dates of these movements, but these dates are generally acceptable as benchmarks for each movement.

3 What we have in mind in this regard is a "plausibility probe" (Eckstein, 1975) rather than formal hypothesis testing.

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3

Federalism and State Environmental Policy

James P. Lester

How profoundly state governments have changed. They now are arguably the most responsive, innovative, and effective level of government in the American federal system.—Carl E. Van Horn, *The State of the States,* 1989

Some states never make the top ten in any specific policy area. . . . One cannot assert that the resurgence of the states . . . has occurred across the board.—William R. Lowry, *The Dimensions of Federalism,* 1992

These two statements illustrate vastly different perspectives on the nature of public policy in the fifty American states today. Some argue that either because of a lack of state resources or because of a lack of political will, state governments are the principal impediment to effective American government. According to these critics, state governments lack the fiscal resources or technical expertise available to national governments, they tend toward parochialism, they are unwilling or unable to raise revenues to meet service demands, and they are dominated by a conservative, business-oriented elite. Others argue that the institutional reforms of the 1970s and the 1980s changed all this. The supporters of state governments argue that compared with the federal government, the states are in closer touch with the problems to which proposed rules will be applied, are more flexible and innovative, and better able to fashion responses that are appropriate to their individual conditions and preferences (Henig, 1985; Scholz, 1981).

These two perspectives pose interesting questions about state environmental management in the 1990s. What have the states done as far as protection of the environment is concerned? Are the states innovative actors as some suggest or, as others claim, are they bastions of resistance to environmental protection? I attempt to answer these questions by examining the responses of the fifty states to problems posed by environmental pollution. Moreover, this is a particularly important time to examine state environmental politics and policy. First, the 1990s are seeing the state implementation of important environmental laws enacted during the previous three decades. Nearly all the major federal environmental statutes call for implementation shared by the federal and state governments. Under the concept of "partial preemption," the federal government sets minimum environmental standards and objectives, but states are given the latitude to design and implement their own laws. Essentially, the procedure allows the federal government to return program responsibility to the states while retaining the authority to decide on the acceptability of states' actions. Hence the role of the states is paramount (Crotty, 1987). Like the 1980s, the decade of the 1990s will be an "implementation era" in environmental policy, as well as in other areas of public policy.

Second, intergovernmental relations (meaning the relationships among the federal, state, and local governments) have recently taken on greater significance than ever before. During the 1970s and the 1980s, the doctrine of New Federalism stressed devolution of authority from the federal level to state and local levels in many areas of public policy. As part of the legacy of the Reagan and Bush presidencies, states and local communities are taking on many responsibilities for protecting the environment that were previously assumed by the federal government. Indeed, the 1989 head of Vermont's environmental agency, Jonathan Lash, has said that the most important innovations in environmental protection are now occurring at the state level (Shabecoff, 1989). Many others agree with this assessment.

Finally, the states themselves have undergone important transformations in their institutional capacities for implementing federal programs during the past twenty-five years. Presumably, states are no longer the weak link in the intergovernmental system of the United States. These changes of the past two decades are so far-reaching as to constitute a clear break with the past (Bowman and Kearney, 1986). For all of these reasons, then, it is important to review changes in intergovernmental relations over the previous two decades and to assess the implications of these changes for the future of environmental policy in the states.

In this chapter several questions are addressed. First, what is the New Federalism, and what are the implications of this change in federal-state relations for environmental management? Second, how are the states responding to the New Federalism, as indicated by environmental policy innovations, environmental policy commitments, and environmental policy implementation at the state level? Third, why have the states reacted as they have to the New Federalism? Finally, what are the prospects for state environmental policy in the mid-1990s, given the shift in emphasis for environmental management from the federal government to state and local governments?

Federal Devolution of Authority and Resurgence of the States

Two dramatic developments affected the states during the 1970s and the 1980s. First, the Nixon, Reagan, and Bush administrations, under their various programs of New Federalism, attempted to return power and authority to the states and cities. New Federalism, which began with the State and Local Fiscal Assistance Act of 1972, mandated an expanded role for state and local governments. Among other things, states would become less subject to fiscal control by the federal government. Initially, New Federalism involved a number of short-term inducements, such as programmatic flexibility, elimination of de facto dual planning requirements for categorical grant applications, and increased consultation with state and local decision-makers prior to the initiation of "direct development" activities (O'Toole, 1985; Nice, 1987; Anton, 1989). The New Federalism program of the 1980s had two major objectives as far as environmental policy was concerned. Essentially, the objectives of President Reagan's New Federalism were to "decentralize" and "defund" federal environmental protection activities (Nathan and Doolittle, 1983; Nathan et al., 1987; Lester, 1986; Davis and Lester, 1987; Kraft et al., 1988). Proponents of the Reagan administration's program argued that the states, with their enhanced institutional capacities, were in a position to assume greater responsibilities than ever before. States and cities would simply make difficult choices about which programs they wanted to retain (and thus replace federal cuts with their own funds) and which ones they wanted to terminate. In this sense, then, public pressure would force state decision-makers to take actions that reflected localized policy preferences. Critics, on the other hand, argued that the administration shifted responsibilities to the states, at least in the environmental area, for another reason as well—as a way to eliminate some programs altogether (Davies, 1984).

During the Reagan and Bush administrations, the states were subject to substantial budgetary cuts in a number of environmental program areas, including air pollution control, water pollution control, hazardous-waste management, pesticide enforcement, wastewater treatment, and safe drinking water (Lester, 1986). This raised the question of whether the states would replace the federal cuts with their own-source funds. Early assessments of the extent to which the states were willing or able to replace the federal cutbacks with their own funds suggested that most of the states did *not* do so in the environmental area, at least during the period from 1981 to 1984 (Lester, 1986). Those states that did replace the federal cuts with their own funds were those that had demonstrated the political will to assume the administration of federal environmental programs under "partial preemption," and those with an ethos conducive to environmental protection (Davis and Lester, 1987). During the period from 1985 to 1995, some evidence suggests that many of the states replaced lost federal funds by increasing state and local taxes and user fees (Lemov, 1989). While we do not have complete evidence about the behavior of all the states during this period, we can assume that some of the states did *not* replace the federal cuts with their own funds. This assumption is based on the fact that states were faced with a national recession during this time. Moreover, the fiscal climate in many of the states has not been conducive to raising taxes. Rather, many states have been constrained by an antitaxation ethic rather than an emphasis on raising taxes to fund environmental programs.

The second dramatic development that has affected the states during the past two decades is the transformation of their institutional capabilities. The states revised their constitutions, professionalized their legislatures (for example, by increasing salaries and staff support), modernized and strengthened the governor's office, reorganized their executive branches, reformed their courts, increased their revenues through tax diversification, and provided greater opportunities for citizen participation in state government through "open meeting laws" and other reforms (Advisory Commission on Intergovernmental Relations, 1986; Bowman and Kearney, 1986). However, not all states adopted such reforms, nor were all equally able to make these modifications (Bowman and Kearney, 1988). Hence, not all of them are able effectively to assume their new environmental responsibilities under the New Federalism of the 1990s.

These two developments have serious implications for state environmental policy during the past two decades. While some states replaced the federal cuts with their own funds, other states did not; similarly, while some of the states reformed their institutions, others made no reforms. Therefore, we would expect that states' behavior in environmental protection policy will vary significantly, depending upon the extent of their institutional reforms and their internal commitments to environmental protection. In the next section, we review state behavior in the environmental area, focusing on environmental policy innovations, environmental policy commitments, and the extent of environmental policy implementation.

The States' Response to New Federalism: 1970–1992

So much attention has been focused on activities of the federal government that many important developments at the state level have been given less attention than they deserve. Some states exhibit striking examples of innovative activity, while others are more conventional and less active. In fact, studies suggest a great deal of diversity in responses by the states to the challenges posed by the New Federalism of the 1970s and 1980s. A number of researchers in think tanks and university settings have studied innovative state actions and the extent of state environmental policy implementation. Some of the more impressive state activities are discussed here.

Environmental Policy Innovations

The Institute for Southern Studies has collected recent information on innovative environmental and natural resource policies. This information, published in the *1991–1992 Green Index,* began as an assessment of environmental conditions and policies in the fifty states. The "Green Policy Initiatives" ranking is based on the status of fifty state environmental policies that are considered to be innovative as far as policy formulation is concerned. Table 3.1 presents these data. The states with the best records in environmental policy innovation are California, Oregon, New Jersey, Connecticut, Maine, Wisconsin, Minnesota, Massachusetts, New York, and Rhode Island (Hall and Kerr, 1991). Innovative state actions include a groundwater discharge permit system in Arizona; statewide recycling mandates in some states; Proposition 65 in California on toxic use reduction; and source reduction programs in twenty-seven states since 1987 (U.S. Environmental Protection Agency, 1992). In addition, a number of states (for example, New York, Connecticut, New Jersey, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) have announced restrictions on the amount of gasoline vapor that may be emitted by automobiles (Council of State Governments, 1986; U.S. Office of Technology Assessment, 1986). In another regional effort, Virginia, Maryland, Pennsylvania, and the District of Columbia are cooperating to clean up the badly polluted Chesapeake Bay (Shabecoff, 1989). Colorado has worked hard to reduce air pollution in Denver, and New Jersey has imposed new environmental taxes and fees and set up revolving loan funds. Variations in state groundwater quality protection programs suggest that some states, like Arizona, have been quite innovative, while other states, like Texas, have been much less so (Regens and Reams, 1988).

Recent innovative programs in five states deserve special mention. The

Table 3.1. The Best and Worst States in Environmental Management

State	Final Green Index Rank (256 Indicators)	Green Policy Initiatives Rank (50 State Policies)
Oregon	1	2
Maine	2	5
Vermont	3	12
California	4	1
Minnesota	5	7
Massachusetts	6	9
Rhode Island	7	10
New York	8	8
Washington	9	14
Wisconsin	10	6
Connecticut	11	4
Hawaii	12	24
Maryland	13	15
New Jersey	14	3
New Hampshire	15	20
Colorado	16	26
Michigan	17	11
Florida	18	13
Idaho	19	36
Iowa	20	16
Montana	21	31
Nevada	22	43
North Carolina	23	18
Delaware	24	25
North Dakota	25	37
Pennsylvania	26	21
South Dakota	27	48
New Mexico	28	38
Nebraska	29	30
Missouri	30	23
Illinois	31	17
Virginia	32	22
Utah	33	41
Alaska	34	47
Arizona	35	39
South Carolina	36	32
Ohio	37	19
Wyoming	38	44
Georgia	39	29

Table 3.1. Continued

State	Final Green Index Rank (256 Indicators)	Green Policy Initiatives Rank (50 State Policies)
Oklahoma	40	42
Kentucky	41	33
Kansas	42	28
Indiana	43	27
West Virginia	44	45
Tennessee	45	40
Texas	46	35
Mississippi	47	46
Arkansas	48	50
Louisiana	49	34
Alabama	50	49

SOURCE: Hall and Kerr, 1991: 3.

first is Massachusetts's attempt to reduce pollution by preventing pollution before it happens. Called the Blackstone Project because it covers industries in the Upper Blackstone Water Pollution Abatement District, the experiment is a joint effort of the Massachusetts Department of Environmental Protection (DEP) and the Office of Technical Assistance (OTA). To make it work, DEP united its separate programs governing air, water, and hazardous waste pollution into a new Bureau of Waste Prevention, and then began coordinated inspection visits. The new inspection system took up to 50 percent less time than conventional inspections and saved the state considerable money. Initially, regulators found that of the twenty-eight firms inspected in the Blackstone River valley, twenty were not complying in one or more environmental areas. They referred the offending companies to the OTA, which showed the firms how they could significantly reduce pollution by reusing materials more effectively or by substituting less toxic chemicals for the hazardous substances they typically used in the production process (Steinbach, 1991).

A second example is California's mobile source (automobile) pollution control policy. Federal policymakers have, for some time, acknowledged California's leadership in this area by exempting the state from federal standards and allowing other states to emulate California's efforts (Lowry, 1992). California's tailpipe emissions standards, including carbon monoxide emissions, are tougher than the federal government's and have led the rest of the country by two to five years. California's standards are even emulated by the federal government: the 1990 revisions to the Clean Air Act incorporated the California exhaust emission standards for light-duty vehicles into both the House and Senate versions of revisions to the Clean Air Act (Lowry, 1992).

Another innovative state program is Florida's "Amnesty Days," in which, once a year, a free, mobile, hazardous-waste collection program visits each county. The program provides the opportunity for each citizen, school, business, or government agency to properly dispose of up to one fifty-five-gallon drum of hazardous waste. One of the first in the nation, this program has been a model for other cities and states to follow as they implement new requirements for small-quantity generators under the Hazardous and Solid Waste Amendments of 1986.

In addition, Wisconsin's stationary source air pollution control program deserves special mention. Wisconsin has a strong state implementation plan (SIP) for air pollution, conducts extensive research on acid rain, has developed a toxics program, and is scored very high by outside authorities on its overall stationary source program (Lowry, 1992). According to one researcher,

> Wisconsin's regulatory efforts center around permits for polluters. The process works as follows. Rules are proposed by the Department of Natural Resources (DNR) concerning specific areas of pollution, such as sulfur emissions, particulates, and organic compounds. Following public hearings, the rule is subject to approval by the independent DNR board. If approved (the rule), the state legislature has thirty days to veto the rule. Without veto, the rules become part of the Wisconsin SIP. The rules define pollutants, specify emission limits for various polluting processes, and explicate compliance schedules and variances. . . . One major attribute of this program is speed, which enables rapid responsiveness by the state to air pollution problems. (Lowry, 1992:49)

Finally, Delaware's Regulation for the Management of Extremely Hazardous Substances, first implemented in 1989, helps protect the substantial part of Delaware's population living in the vicinity of industrial plants that use, store, transfer, process, or produce hazardous substances. The program mandates that each facility greatly improve its risk management techniques in order to comply with the regulation and to reduce the probability of a catastrophic event. Delaware's program is the first such program to extend regulation beyond toxic air contaminants to flammable, combustible, and explosive materials (Council of State Governments, 1992).

During the 1990s, more innovative actions by the states are likely as they attempt to deal with environmental problems. Some states, however, have been far less active in changing their environmental policies during the past decade (Ringquist, 1993). These states cause concern regarding their willingness and ability to deal with the diversity of environmental threats in the 1990s.

State Commitments and Environmental Management

As noted earlier, the states vary substantially in their commitment to environmental protection policies and in their ability, economically and institutionally, to carry out strong environmental protection programs. A number of organizations have collected data that provide an indication of state commitment to the environment. For example, the recent *Green Index* is a set of 256 indicators that measure and rank each state's environmental health and overall commitment to environmental protection. A state's final *Green Index* score is the sum of the state's ranks for all 256 indicators, with each indicator carrying equal weight. These data, collected mostly in 1989, suggest that Oregon, Maine, Vermont, California, Minnesota, and Massachusetts are the most heavily committed to the environment, while Texas, Mississippi, Arkansas, Louisiana, and Alabama are among the least committed (Hall and Kerr, 1991). (See table 3.1.)

In addition to the *Green Index,* the Fund for Renewable Energy and the Environment (FREE) provides data on what the states have done to protect the environment (Ridley, 1987). Since 1987, FREE has conducted an annual study that is nonfiscal in nature and reports an assessment of where the states stand on key environmental issues such as air pollution reduction, soil conservation, solid waste and recycling, hazardous-waste management, groundwater protection, and renewable energy and conservation. According to these data, Massachusetts, Wisconsin, California, and New Jersey are the most active states, and Arkansas, Mississippi, West Virginia, and Wyoming are the least active. In FREE's most recent study, other states in the top ten are Oregon, Minnesota, Iowa, Florida, Maryland, and Connecticut (Obmascik, 1989). Both the *Green Index* and FREE identified essentially the same states as the most environmentally concerned over time.

States' institutional capabilities to protect the environment vary as well as their commitment to environmental protection. In 1988, in 1990, and again in 1992, the Council of State Governments studied the fifty states' institutions for environmental management, their expenditures for environmental and natural resource programs, and the numbers of state government employees with environmental or natural resource responsibilities (Brown and Garner, 1988). These data indicate some problems in the states' ability to effectively manage the environment, no matter how progressive or innovative they may be. Some environmental problems, such as toxic waste, cannot be effectively managed without enormous sums of money and highly trained staff. Yet these data, and interviews with environmental personnel at both federal and state levels, indicate that the states suffer from insufficient fiscal resources, inexperienced and not enough staff, high staff turnover, and other problems that will adversely affect the states' abilities to implement federal directives in the 1990s.[1]

Environmental Policy Implementation

Mere enactment of a policy does not guarantee that the policy will be put into effect. Effective implementation of environmental policies is essential, and it varies from state to state. For example, implementation may be achieved by the delegation of authority from the federal government to the states to manage their environmental programs after they have met federal guidelines. A number of scholars have studied the extent to which various states have assumed responsibility to run environmental programs and thereby increased the speed of implementation (Wassenberg, 1986; Crotty, 1987; Lester, 1988; Lester and Bowman, 1989; Lowry, 1992; Ringquist, 1993). Between 1972 and 1988, some states accepted primary responsibility for enforcing national environmental standards within their boundaries. States that scored highest in this regard included California, Michigan, Minnesota, New York, Washington, and Wisconsin (Crotty, 1987; Jessup, 1989).

In addition, environmental policy implementation may be indicated by the amount of money spent on state environmental programs. The U.S. Department of Commerce collected data on environmental quality control expenditures from 1969 to 1980 (U.S. Department of Commerce, 1982). These data show that California, Delaware, Maryland, Massachusetts, New Hampshire, Ohio, Rhode Island, and Vermont had the highest per capita expenditures, while Mississippi, Oklahoma, South Carolina, Texas, Utah, and Virginia had the lowest. Unfortunately, due to budgetary cutbacks in 1981, this data collection effort was halted. Without continuous data from 1981 to the present, it is difficult to assess fully the impact of New Federalism on state environmental spending.

Nevertheless, recent efforts by the Institute for Southern Studies and the Council of State Governments have provided new data on state environmental protection expenditures that will help to fill the vacuum created by the elimination of the Department of Commerce data. Table 3.2 presents data on state expenditures for environmental protection in 1988, the most recent figures available. These data indicate that California, New Jersey, Florida, Illinois, Pennsylvania, Washington, Massachusetts, New York, Michigan, and Louisiana now lead the nation in terms of total environmental expenditures. Note, however, that the top ten rankings shift significantly when spending per capita is considered or when expenditures are measured as a percentage of the total state budget, which is perhaps the best indicator of the priority of environmental protection activities within a state (Hall and Kerr, 1991). In spending as a percentage of a state's total budget, the states of Wyoming, Alaska, Montana, New Jersey, Oregon, Idaho, Washington, and California lead the nation, while Oklahoma, Ohio, Indiana, and Texas spend the least.

In sum, the evidence indicates that some states exhibit innovative and responsible behavior in implementing environmental policy by setting up appropriate environmental institutions, staffing them with capable personnel, and spending the necessary resources. Other states, however, are largely unresponsive to environmental needs. They fail to provide the necessary resources, staff, or innovative policies; thus it is doubtful that their environmental quality is improving. In the next section I review various explanations of effective state environmental management.

Explaining State Environmental Management

Political scientists have sought to explain the variation in state environmental protection policies and program implementation. Such information is useful in two respects. From a purely pragmatic point of view, an understanding of why states behave as they do can be used to formulate strategies for political action that could stimulate inactive states to be more responsive to environmental concerns. Second, this information may be used for scientific purposes as well; research findings can be used to suggest policy reforms that might encourage more effective implementation of environmental policies by the states.

There are at least four basic explanations for effective policy responses to the problems posed by environmental pollution: the severity argument, the wealth argument, the partisanship argument, and the organizational capacity argument (Lester et al., 1983).

The "severity argument" is that rapid and concentrated population

Table 3.2. State Spending on Environmental Protection, 1988

State	Total in $1,000s	Per Capita	% Total State Budget
Alabama	$64,907	$15.73	1.02%
Alaska	131,684	256.69	4.00
Arizona	46,613	13.45	0.96
Arkansas	44,189	18.24	1.15
California	1,486,124	52.76	2.60
Colorado	76,150	23.15	1.65
Connecticut	61,996	19.13	0.77
Delaware	33,170	50.26	1.80
Florida	465,591	37.62	2.51
Georgia	93,344	14.58	1.07
Hawaii	27,832	25.46	0.85
Idaho	61,442	61.50	4.22
Illinois	392,844	34.03	2.26
Indiana	52,776	9.46	0.68
Iowa	88,065	31.07	1.44
Kansas	47,817	19.23	1.23
Kentucky	120,289	32.33	1.64
Louisiana	193,836	43.85	2.64
Maine	39,332	32.61	1.88
Maryland	150,091	32.32	1.60
Massachusetts	237,936	40.53	1.56
Michigan	221,425	23.81	1.42
Minnesota	126,236	29.32	1.46
Mississippi	54,154	20.61	1.40
Missouri	119,907	23.33	1.73
Montana	69,560	86.52	4.29
Nebraska	27,988	17.48	1.29
Nevada	36,487	34.42	2.57
New Hampshire	33,588	30.62	2.41
New Jersey	523,874	67.86	3.61
New Mexico	44,782	29.66	1.48
New York	236,484	13.21	0.59
North Carolina	96,943	14.85	1.00
North Dakota	32,524	49.06	2.32
Ohio	125,669	11.56	0.65
Oklahoma	40,869	12.52	0.79
Oregon	186,438	68.02	3.03
Pennsylvania	288,766	24.01	1.49
Rhode Island	35,879	36.06	1.86
South Carolina	71,124	20.36	1.21

Table 3.2. Continued

State	Total in $1,000s	Per Capita	% Total State Budget
South Dakota	21,264	29.74	1.85
Tennessee	81,180	16.50	1.34
Texas	113,797	6.78	0.60
Utah	51,419	30.41	1.80
Vermont	20,222	36.37	1.94
Virginia	152,149	25.38	1.47
Washington	246,873	53.45	2.63
West Virginia	56,189	29.82	1.68
Wisconsin	167,779	34.54	1.70
Wyoming	128,051	271.87	7.73

SOURCE: Hall and Kerr, 1991: 148.

growth, extensive industrialization (especially a reliance on the petrochemical and metallurgical industries), and steady rates of public consumption of goods and services create severe pollution problems that, in turn, bring about strong pressures for environmental protection policies. Thus, an obvious source of environmental policy differences among the states is the severity of the pollution problem itself (Wenner, 1976). In other words, it is assumed that states with more severe environmental pollution problems will take the necessary steps to deal with this pollution. However, studies suggest that the relationship between problem severity and state environmental protection is mixed, at best, and that more refined indicators of pollution severity are needed before a final assessment of its effect on state environmental policy can be known (Game, 1979). Factors other than problem severity (such as politics or economics) appear to be affecting states' behavior in this area.

The "wealth argument" posits a direct relationship between the socioeconomic resource base of a state and the level of its commitment to environmental protection (Lester and Keptner, 1984). States with greater fiscal resources are assumed to spend more on environmental protection than those with fewer fiscal resources. Those who ascribe the failure of government to act in the environmental area to states' "backwardness" or unresponsiveness to environmental problems often overlook the wealth factor. Wealth, in fact, accounts for a significant amount of the variation in state efforts to protect the environment (Lester and Keptner, 1984).

The "partisanship argument" is based on possibly the most common generalization in environmental politics literature: environmental policy formation can be explained, to a large extent, by political party (or ideological) differences. Riley Dunlap and Richard Gale argue that there are important reasons for expecting significant partisan differences to emerge on environmental issues, with Democrats being more supportive of such efforts than Republicans. These reasons largely concern differences between the two major parties in their support for business interests, which are often opposed to environmental protection policies that regulate their behavior and impose compliance costs on them (Dunlap and Gale, 1974). In a recent review of the literature, Jerry Calvert found that for these reasons Democratic partisanship is strongly related to environmental voting within state legislatures and Congress (Calvert, 1989).

Finally, the "organizational capacity argument" focuses on administrative and legislative reforms as predictors of environmental policy outputs. Proponents of this view contend, for example, that reorganization (especially centralization) of the environmental bureaucracy promotes environmental protection policy by helping to eliminate jurisdictional overlaps, jealousies, and conflicts among multiple agencies in this area (Garnett, 1980). Moreover, consolidation of the environmental bureaucracy increases the state governor's span of control and, with regard to crucial appointments in environmental agencies, improves the governor's ability to mobilize the bureaucracy in support of his or her objectives.

In addition, it is often argued that "professional" legislatures facilitate environmental protection more effectively than unprofessional legislatures (Citizens' Conference on State Legislatures, 1971). Presumably, professional legislatures are more responsive to environmental needs, generous in spending and services, and "interventionist" in the sense of having powers and responsibilities of broad scope. The evidence suggests that, in some instances, consolidated environmental bureaucracies and professional legislatures do make a positive contribution to the states' efforts to protect the environment (Lester and Keptner, 1984).

While each of these four arguments provides some insight into the determinants of state environmental protection policies, none captures the complexity of the policy process or sufficiently explains the multiple forces that influence states' commitment to environmental quality. Each argument simply assumes that conditions within the states themselves are the sole (or even primary) influences on state environmental management. Given the intergovernmental influences on state environmental behavior described earlier in the chapter, it seems appropriate also to consider external influences on state efforts to protect the environment (Rose, 1973). The four explanations of state environmental management should be considered in a wider context that includes federal-level, as well as state-level, influences

(Lester and Lombard, 1990). In other words, what the states do in the environmental area will be shaped within an intergovernmental framework that includes federal inducements and constraints, such as the amount of federal environmental aid. Some states (e.g., Rhode Island, Montana, Connecticut, Idaho, Vermont, Nebraska, Arizona, Maine, Missouri, and Alabama) are heavily dependent upon federal aid in the environmental area, while other states (e.g., California, New Jersey, and Oregon) are not very dependent at all (Lester, 1986). When federal aid is reduced, dependent states are even more constrained by the availability of resources for environmental protection.

The Future of State Environmental Management

During his first two years in office, President Clinton said nothing to indicate whether he would reverse the flow of responsibility to the states and cities that has occurred since the early 1970s. Nor did he indicate whether the states would receive more money to fund environmental programs. Because of the federal budget deficit, as well as President Clinton's 1992 campaign pledge not to significantly raise taxes for the middle classes, it is logical to assume that the states will be left to their own resources to carry out their environmental responsibilities. Thus, it appears that decentralization of federal environmental programs and reduced federal environmental grants-in-aid are likely to continue at least into the mid-1990s. If that is the case, then state environmental management will be governed by two considerations that are internal to the states themselves. The first concerns state government institutional capability, while the second concerns state commitment to environmental protection. While federal (and local) influences should be considered in future studies of state environmental policy, it is these within-state influences that are most useful in predicting what the states will do in the area of environmental management in this decade.

As I mentioned earlier, not all the states have taken initiatives to revitalize their institutional structures. In addition, the states vary substantially in terms of their commitment to environmental protection. Therefore, it may be argued that a state's response to New Federalism in the mid-1990s will depend upon two different, but nevertheless complementary, dimensions: its commitment to environmental protection activities and its institutional capabilities. Based on these two dimensions, the states can be divided into four groups—progressives, strugglers, delayers, and regressives—that span the probable range of state environmental policy development in the mid-1990s.

The Progressives

The first group of states are those with a high commitment to environmental protection coupled with strong institutional capabilities. They include California, Florida, Maryland, Massachusetts, Michigan, New Jersey, New York, Oregon, Washington, and Wisconsin. In these states substantial improvements in the quality of the environment and in the implementation of federal environmental legislation are expected. As these states move ahead with regard to environmental quality, they may adopt policies that are independent of federal mandates. Environmental conditions will likely get better, not worse.

California, for example, considers the natural environment a very important issue. For almost three decades "air pollution bills have been winning approval in Sacramento, well ahead of the national government" (Pierce and Hagstrom, 1984:766). For states such as California, the major issue will be the extent to which the private and public sectors can reach a consensus on the rather drastic environmental policies that these states will likely pursue. Significant tensions may arise in the course of these deliberations.

The Strugglers

A second category of states includes those with a strong commitment to environmental protection but with limited institutional capacities. The group includes Colorado, Connecticut, Delaware, Hawaii, Idaho, Iowa, Maine, Minnesota, Montana, Nevada, New Hampshire, North Carolina, North Dakota, Rhode Island, and Vermont. These states are willing, but often structurally unable, to implement federal environmental programs effectively. In other words, they have the will but not the resources (fiscally and institutionally) to pursue aggressive environmental protection policies. Progress probably will be made in these states, but it will be slower and possibly less innovative than in the progressive states. The "strugglers" will do the best they can within the constraints imposed on them. The major issues in these states will revolve around finding the means to implement aggressive environmental protection policies. Much of the debate will focus on issues associated with tax increases as these states seek to increase their resource base for environmental protection.

Vermont, for example, is staunchly protective of its environmental assets, but historically has been described as a "low service, high unemployment, communal" state (Pierce and Hagstrom, 1984:199). That is, it has kept the costs of government low and has preferred a decentralized, town-meeting approach to its problems as opposed to the development of strong state institutions that are necessary for effective environmental policy.

The Delayers

The third group of states are those with a strong institutional capacity but with a limited commitment to environmental protection. These include Alabama, Alaska, Arkansas, Georgia, Illinois, Louisiana, Missouri, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and West Virginia. They will probably maintain the status quo with respect to the environment and move very slowly in implementing federal legislation. Whatever progress is made will be painstakingly slow (Schueler, 1992).

States that are dominated by the energy industry, such as Louisiana, Oklahoma, Texas, and West Virginia, belong to this group. West Virginia, for example, has been characterized as "still struggling," which means that it has few if any areas of exceptional program management, save for welfare policy (Pierce and Hagstrom, 1984:345). It is a state that depends heavily on the federal government for aid and has not been able to build up its political institutions in a way that would sustain innovative environmental policies (Pierce and Hagstrom, 1984). The major issue in these states will be apathetic state bureaucracies that seem unwilling to respond effectively to state environmental crises.

The Regressives

States with weak institutional capacities as well as a limited commitment to environmental protection include Arizona, Indiana, Kansas, Kentucky, Mississippi, Nebraska, New Mexico, South Dakota, Utah, and Wyoming. For these states, decentralization of environmental programs will likely be a disaster. They may fail to adequately implement federal laws in this area, and they are unlikely to take independent actions. The quality of life may deteriorate so much that large numbers of the population may move to other states (especially the more progressive ones). Dirty industries may continue to move into these states, making them even more unattractive to the inhabitants. These states will continue to promote economic development at the expense of environmental quality. At some point a catastrophe may turn the states in this category around, but at present they seem to be captured by an obsessive optimism that prevents their taking necessary precautions against further damage to the environment.

Mississippi, for example, has been described by Neal Pierce and Jerry

Hagstrom as a state in which the federal cutbacks in the early 1980s made the "road ahead bleaker than anytime since the Great Depression" (Pierce and Hagstrom, 1984:456). All too often, Mississippi is singled out as the state that lags behind all the other Southern states in the area of environmental protection. The "Mississippi syndrome," as it is called, means a state that cannot, or will not, move ahead in the implementation of its programs to protect the environment.

Conclusions and Implications

In this assessment of state environmental policy under the doctrine of New Federalism, I have described changes in federal-state relations and reforms of state institutions and examined environmental policy innovations in the states (including their commitment to and capacity for environmental policy making). I also discussed implementation in the states and offered several explanations for the ways in which states manage their environments. Finally, I suggested that four types of states exist in the 1990s: progressives, strugglers, delayers, and regressives. The scenarios for each type range from extremely optimistic (the progressives) to extremely pessimistic (the regressives) on their effectiveness in addressing environmental problems. The scenarios assume no major changes in state commitments or institutional capabilities; however, public opinion, recent tendencies toward participatory democracy, and attention by the media could cause some legislators to adopt very different strategies if conditions become intolerable (Goldsteen and Schorr, 1991).

The policy implications of this discussion are significant. If we find that federal factors are crucial influences on state environmental management, then the argument for centralization of environmental management would once again acquire enhanced credibility. That is, if federal inducements (such as federal legislation and intergovernmental aid) are necessary conditions for successful state environmental management, then a policy of decentralization probably will not work effectively for all states. On the other hand, if state conditions strongly influence state environmental management, then arguments about decentralization of environmental management would acquire even more credibility. Decentralization may also work well in some states (the innovative ones, for example) but poorly in others. Thus, "selective decentralization," a policy in which some programs are decentralized for some states while the same or other programs for other states are not, may be a more appropriate strategy (Peterson et al., 1986).

In any case, policymakers need to reconsider the nature of intergovernmental relations as they affect state environmental management. The federal government may or may not be the most appropriate governmental institution to tackle environmental pollution, but it should also be recognized that the fifty states are not equally able to muster the necessary resources to deal with environmental problems in the 1990s. Novel approaches will be required and are particularly appropriate in an era of "regulatory federalism," which will likely characterize the near future.

Future Directions for State Environmental Politics Research

The preceeding discussion suggests the need to modify our thinking about state environmental policy and how we might go about studying state behavior in the future. In the decades of the 1970s and the 1980s, comparative state policy studies were primarily concerned with explaining state policy *formation*. In the next few years, however, it is likely that the primary area of investigation will be directed toward an explanation of state *implementation* of federal programs. To achieve this requires an analytical framework very different from the "mainstream model" used in previous studies of comparative state policy research. Thus, a model of state policy implementation is needed, rather than a model of state policy formation.

In addition, this new framework needs to take account of the influence of federal and local variables, as well as state variables on state policy implementation. Such a framework would be responsive to the criticism that previous research in this area has been too concerned with bivariate relationships (in the absence of a genuine theory) or has adopted a "mainstream model," which was endogenic (at best) or inaccurate (at worst), by assuming that only state-level variables influenced state policy outputs (Lester and Lombard, 1990).

The implementation framework developed by Malcolm Goggin and his associates (1990) is a useful starting point. It sees the state implementation process as resulting from choices made by the state. Yet these choices are in turn a function of inducement and constraints provided to or imposed on the state from elsewhere in the system—federal or local—as well as the state's capacity to realize its preferences. As I noted earlier, it is necessary to understand the relative effect of federal, state, and local influences on state environmental policy. Some research suggests that federal-level variables are more important determinants of state environmental policy implementation than state or local influences (Bowman and Lester, 1993). Still, much more research is needed in order to pave the way for the theory and practice of state environmental policy implementation. Not only are such investigations beneficial to the development of our knowledge of comparative state politics and policy, but they may ultimately contribute to a genuine theory of state policy implementation in an era of regulatory federalism.

Note

1 Interviews with staff at the U.S. Environmental Protection Agency, Office of Solid Waste, State Programs Branch, July, 1987.

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PART TWO

Actors and Institutions

4

Public Opinion and Environmental Policy

Riley E. Dunlap

Over a quarter century ago environmental quality began to emerge as a major social problem in our society. Issues such as wilderness protection and air pollution had received the attention of relatively small numbers of conservationists and public health officials, but in the mid-sixties a wide range of threats to environmental quality began to attract the attention of the media, policymakers, and the public (see, e.g., Trop and Roos, 1971). By 1970 "the environment" had clearly become a major national concern, as reflected in the huge scale of the first Earth Day (April 22, 1970) celebrations across the nation. Path-breaking environmental protection legislation was enacted at all levels of government during the late sixties and early seventies, reflecting the link widely assumed to exist in democratic societies between public opinion and governmental action (e.g., Key, 1961).

While the degree of correspondence between public opinion and policy output is a matter of debate (Pierce et al., 1982:chap. 14), it is generally assumed that the success of efforts to protect or improve "public welfare" (as opposed to efforts to enhance private interests) is significantly dependent upon supportive public opinion. Whether such efforts are spearheaded by political leaders, issue entrepreneurs such as Ralph Nader, or full-fledged social movements, their success or failure is likely to be heavily influenced by the amount of support they receive from the general public. Although contributions (money, time, etc.) and political support (voting, petition signing, letter writing, etc.) are obviously crucial, the mere expression of supportive opinion in a scientific survey or informal poll—as frequently conducted by local newspapers and politicians—can also be a vital resource. As Mitchell (1984b:52) notes with regard to the environmental movement, "Public support of environmental groups provides them with a key lobbying resource because it lends credibility to the claim that they represent the 'public interest.'" The existence of supportive public opinion is a resource not only when lobbying for new legislation but when pressing for the effective implementation of existing legislation as well (Sabatier and Mazmanian, 1980:550; also see Lake, 1983:216).

For these reasons the status of public opinion on environmental issues has received a great deal of attention over the past quarter century. The degree to which the public supports efforts to protect environmental quality, and whether such support has increased or decreased, has been the subject of considerable debate over the years (see, e.g., Ladd, 1982). The purpose of this chapter is to present a comprehensive review of the available evidence on public concern for environmental quality over the past two-and-a-half decades. I focus in detail on the longitudinal data in an effort to draw conclusions about trends in public opinion since the mid-sixties. The task is difficult because there are no data sets that have continuously monitored public opinion on environmental issues over this full time span. However, by piecing together several sets of relevant trend data, I hope to draw accurate conclusions about the broad contours of trends in public concern. I compare conclusions to expectations derived from an influential model of the evolution of public concern with environmental problems in particular, and social problems in general, set forth by Downs (1972) shortly after the emergence of environmental quality as a major social issue.

Before turning to the trend data, I describe Downs's "issue attention cycle" in some detail and examine the concept of public opinion itself, in an effort to develop some conceptual distinctions that may help in evaluating public concern for environmental quality. I then review four sets of trend data, covering the late sixties to 1970, the early seventies, the mid- to late seventies, and the eighties to the early nineties. Along the way I try to assess the degree to which the available data conform to expectations derived from the issue attention cycle and will suggest modifications of Downs's model where appropriate. I end by offering an assessment of the current overall strength of public support for environmental quality in the United States.

A Model of the Evolution of Public Opinion: The Issue Attention Cycle

A variety of models of the evolution of public opinion have been developed by opinion analysts (e.g., Pierce et al., 1982:151–56), but Downs's (1972) model of the issue-attention cycle has clearly been the most influential among those interested in public opinion on environmental issues. Writing shortly after Earth Day, 1970, when environmental quality had clearly become a major social problem, Downs suggested that environmental problems would likely meet the fate experienced by most social problems—have a brief "moment in the sun" and then fade from public attention as newer problems take center stage on the national agenda. Specifically, he suggested (1972:39–40) that social problems typically proceed through a five-stage cycle: (1) the "pre-problem stage" where the undesirable social condition exists and may have aroused the interest of experts or interest groups, but has not yet attracted much attention from the public; (2) the "alarmed discovery and euphoric enthusiasm" stage in which one or more dramatic events or crises brings the problem to the public's attention and creates enthusiastic support for "solving" it; (3) a "realization of the cost of significant progress," which dampens public enthusiasm; (4) a gradual "decline in the intense public interest" due to recognition of the costs of a solution, boredom with the issue, and decline in media attention to the problem; and finally (5) the "post-problem stage" in which an issue is replaced at the center of public concern by new problems and moves into "a twilight realm of lesser attention or spasmodic recurrences of interest," typically with little if any improvement in the problematic conditions. Downs went on to say that in 1972 environmental quality was about halfway through the issue attention cycle, although he was careful to qualify his prediction that it would soon disappear from public attention.

Perhaps the reason Downs's analysis has been so influential is not only that his issue attention cycle was elegant in its simplicity (and readily accessible to lay persons) but that it also corresponded nicely to a vast amount of social science research—especially by sociologists and political scientists—on societal efforts to solve social problems. Sociologists have posited a "natural history" model of social problems, in which a social movement or interest group organizes on behalf of a perceived problematic condition (environmental degradation, racial prejudice, and so forth) and works to obtain the attention of the media, the public, and ultimately policymakers. While most "social problem movements" fail to get off the ground, some are successful in getting the larger society to accept their view of certain conditions as "problematic" and to take action designed to ameliorate such conditions—usually in the form of government legislation. The very success of a movement in this regard ironically contributes to its demise, however, as some activists are coopted by government, others lose interest, and the media and public tend to assume the problem is being solved and turn their attention to more pressing problems. Frequently all of this occurs with little if any improvement in the conditions that gave rise to the movement (see, e.g., Mauss, 1975; Spector and Kitsuse, 1977; and Schoenfeld et al., 1979).

While also paying attention to the important role played by interest groups in getting perceived problems onto the political agenda, political scientists have focused relatively more attention on the latter stages of the problem-solving cycle—specifically, why policies designed to solve problems are frequently ineffective. On the one hand it has been noted that many interest groups achieve only "symbolic" victories, with government passing reassuring but essentially meaningless legislation to placate the groups (Edelman, 1964). On the other hand, even when well-funded agencies are set up to solve a problem, they are likely to fail, typically because they are "captured" by the very interests they are supposed to regulate (e.g., polluting industries). Indeed, the presumed common failure of governmental agencies to achieve their intended results has led to the formulation of the "life cycle" or "natural decay" model of regulatory agencies (Bernstein, 1955).

Like Downs, then, many social scientists posit a pattern in which social problems are discovered or created by a group of activists who are successful in getting the larger society to accept their definition of the conditions as problematic. Such efforts are nearly always transitory, however, and a major reason seems to be the inevitable decline of public interest in and attention to the problem. Most authors are rather vague about precisely why the public loses interest, but basic "boredom" with the problem and the fact that the media typically turn to newer, more exciting issues are often mentioned (Downs, 1972; Mauss, 1975:64; Sabatier and Mazmanian, 1980:550). What seems particularly probable and important, however, is that a movement's success in stimulating governmental action to solve a problem leads the public to believe that the problem is "being taken care of" and there's no longer any reason to worry about it. In other words, once the government assumes responsibility for a problem, the general citizenry (and the media and activists to lesser degrees) is likely to feel less personal concern for the problem. Ironically, then, the very success of a movement in getting policymakers to address its grievances (usually dependent upon substantial public support) may tend to undercut its support among the public.

Thus, rather than just assuming that public attention to social problems inevitably progresses through Downs's issue attention cycle, recognition of the crucial role of governmental action (emphasized in the traditional social science literature on social problem solving) provides insight into *why* public concern for social problems typically declines—as well as conditions under which the decline is likely to be exacerbated or retarded. With regard to the latter, I would expect that aggressive governmental action to solve a social problem would, somewhat nonintuitively, lead to a decline in public concern for the problem. Given its origins in the natural history of social problems and natural decay of regulatory agency literature, I have elsewhere termed this hypothesized decline in public concern the "natural decline" model of public opinion toward social problems (Dunlap et al., 1979).

Public Opinion: Some Conceptual Issues

Before going further, I should acknowledge that "public concern for environmental quality" is a rather broad concept. It has the advantage, however, of being applicable to a wide range of data. This chapter, for example, reviews evidence that the public perceives environmental problems in general—or various types of pollution in particular—as serious and that it supports governmental efforts to improve and protect environmental quality, endorses environmental protection relative to other social goals, and is willing to pay for it. All of these indicators appear to reflect a broad "concern" for the environment (see, e.g.; Keeter, 1984; Van Liere and Dunlap, 1981) and, thus, my choice of labels. However, the situation is further complicated by the fact that one can still discern various aspects of this broad concept of environmental concern, a point illustrated in mainstream work on public opinion. Indeed, public opinion theorists have written a great deal about the meaning of both "opinion" and "the public," and some of their distinctions will prove useful in reviewing the data on trends in public opinion toward environmental quality.

Beginning with the concept of opinion, most public opinion analysts distinguish between *individual opinions* and *public opinion,* the latter defined as the aggregate of the former. Many analysts also note the multiple characteristics or aspects of opinions at both the individual and public levels, although there is far from perfect agreement concerning the number and nature of these aspects. The following discussion draws heavily upon Pierce et al. 1982:15–21 and Nimmo and Bonjean 1972:4–6, and to a lesser degree upon earlier sources (Key, 1961; Lane and Sears, 1964).

One can distinguish four important aspects of individual opinions. First is the *direction* of an opinion, whether an individual is pro or con, favorable or unfavorable, toward pollution control, for example. Second is the *degree* (or extremity) of an opinion—whether, for example, an individual is "strongly" or "mildly" in favor of pollution control, or whether he or she views pollution as "very," "moderately," or "slightly" serious. Third is *salience,* or the degree to which an individual is personally interested in an issue. Environmental quality is salient to an individual when it is "on the mind" of that person, and not just something that he or she thinks about when asked for an opinion. Finally, an individual's opinions on different issues vary according to the *intensity* with which they are held, just as individuals vary according to the intensity with which they hold opinions in general. Acknowledging variation in intensity recognizes that two individuals may both "strongly favor" environmental protection, for example, but that one may be far more committed to it than the other (joining an environmental organization, carefully recycling household wastes, etc.).

Turning to public opinion as the aggregate of individual opinions, one can discern four related but not identical characteristics. First is the *distribution* of opinion on an issue, or the proportion of the public falling into each of the various direction/degree categories on the issue. For example, the distribution of opinion on the issue "Federal funding for water pollution programs should be increased" would be the number (and percentage) of people who "strongly agree," "agree," "disagree," or "strongly disagree" with the statement. Second, given the distribution of opinion on an issue, one can determine the extent of *consensus* in public opinion on the issue—that is, whether a sizable majority of the public expresses agreement (or disagreement), or whether the public is sharply divided or polarized on the issue. Third, mirroring the individual level, issues may be of interest to smaller or larger proportions of the public and therefore vary in their *saliency* among "the public." In other words, some issues are more likely to be "on the minds" of large segments of the public than others. Finally, like individual opinion, public opinion varies in its *intensity* across issues. Thus, two issues (e.g., abortion and pollution) may evoke equally positive or negative opinions from equally large proportions of the public, but opinions on one of them may be more intense.

While the foregoing distinctions are important to keep in mind when examining public opinion on environmental issues, applying them to the available data is not easy: Standard measures of public opinion do not provide unambiguous indicators of all of these features of opinion. Most items used in public opinion surveys provide adequate measures of the direction and degree of individual opinions and thus allow one to determine the distribution of opinion and degree of consensus among the public, but this is not the case for salience and intensity. While there appear to be some rough but plausible indicators of the salience of environmental quality for the public, there are no widely used and agreed-upon indicators for judging the intensity with which the public supports environmental protection. Yet, as we shall see, much of the debate over the degree of public concern with environmental quality, both absolute levels and trends over time, reflects differing interpretations of the salience and intensity of such concern. Consequently, I apply these concepts as appropriate when reviewing the data on environmental opinions, with the goals of providing insight into existing debates and clarifying as much as possible the state of public concern with environmental quality.

I noted above that the concept of the public has also received a good deal of attention from public opinion analysts. Probably the most widely used distinction is that between the "mass public" and the "attentive public," the latter defined as the segment of the public that is particularly interested in and informed about the policy issues being examined and the former referring to the rest of the public (see, e.g., Pierce et al., 1982:13–14). However, when dealing with a policy area that is intimately related to the activities of a social movement, as is true of environmental quality, it is helpful to make some finer distinctions which specifically recognize the important role played by the movement.

Sociologists who have examined the interrelations between social movements and public opinion have suggested the importance of distinguishing between various layers or "orbits" of the public organized around an issue such as environmental quality (Hornback and Morrison, 1975; Mauss, 1975:47–49). The following seem most pertinent. At the core of the environmental movement are the "activists," individuals intensely concerned about and personally active on behalf of environmental quality (including, but not limited to, joining an organization such as the Sierra Club). Surrounding the core is a layer comprised of the "attentive public," individuals interested in and informed about environmental issues. These individuals are likely to provide occasional support for environmental causes, signing petitions, voting for proenvironmental issues and candidates, and perhaps even contributing time and money to specific environmental campaigns. The third and probably largest layer is the "sympathetic public," individuals who—although not very attentive to environmental issues—express support for efforts to enhance and protect environmental quality (i.e., the goals of the environmental movement). Outside of these proenvironment orbits are the "neutrals," people who have little interest in and typically no opinion concerning environmental issues. And, finally, there are the "opponents," individuals who are opposed to some degree to the goals of the environmental movement and hold opinions that can be characterized as "antienvironmental."[1]

As in the case of opinion, these distinctions among types of public are important, but applying them will not be easy because of the absence of clearcut indicators of the different orbits. Nonetheless, where appropriate, I will use the data on public opinion on environmental issues in order to make rough estimates of the proportions of the public in each orbit. The estimates may prove useful in summarizing and evaluating trends in public concern for environmental quality.

Lastly, I should point to what appears to be a correspondence, albeit an imperfect one, between the types of publics and the types of opinion noted above. Thus, it seems likely that environmental issues are not only salient for environmental activists, but that their opinions on such issues are held with considerable intensity. Environmental issues should also be relatively salient for the environmentally attentive segment of the public, while the nonattentive but sympathetic public should respond in a proenvironment direction when queried about environmental matters. Finally, we would expect the neutrals to indicate "no opinion," and the opponents to express varying degrees of antienvironmental opinion, when asked about their views on environmental issues.

Trends in Public Concern for Environmental Quality

Reflecting the relatively recent emergence of environmental quality as a major societal issue is the fact that there are virtually no data on public opinion toward environmental issues prior to the mid-sixties. Public opinion pollsters and academic survey researchers both generally ignored environmental issues until the last half of the sixties (see, e.g., Trop and Roos, 1971; Erskine, 1972a; 1972b). I therefore begin my review of trends in public concern with environmental quality by focusing on the emergence of such concern in the sixties and its rapid escalation up to 1970 and then turn to trends in public concern since 1970. The post-1970 trends can be divided into three periods: the early seventies, the middle to late seventies, and the eighties to the present.

The Sixties to 1970: The Emergence of Widespread Public Concern

The fact that environmental issues were virtually ignored by public opinion pollsters in the early sixties indicates that societal attention to such issues was at a low level at that time and that environmental quality was still in what Downs (1972) terms the "pre-problem stage" (of interest mainly to conservationists and air and water pollution experts). The situation changed rapidly in the latter half of the decade, however, as several interrelated developments thrust environmental issues onto the public agenda. Traditional conservation organizations such as the Sierra Club were becoming much more visible, both because they were appealing for widespread public support in battles such as the fight to prevent the damming of the Grand Canyon, and because they were increasingly broadening their focus from the preservation of wilderness and scenic areas to a wider range of environmental problems (e.g., air and water pollution and pesticide contamination). These strategies coincided with a rapid increase in outdoor recreational activities among Americans, likely contributing to the significant increase in membership in several conservation organizations during the late sixties (McEvoy, 1972). At the same time, political leaders such as President Johnson and Senators Muskie and Jackson were pushing important environmental legislation through Congress. These measures ranged from laws designed to improve air and water quality to those protecting endangered species and culminated in the landmark National Environmental Policy Act (NEPA) of late 1969. These activities no doubt helped sensitize the mass media to environmental issues, and by the late sixties environmental problems were receiving tremendous exposure in the media. (On these points see, e.g., Davies, 1977; Fanning, 1975; McEvoy, 1972; Mitchell and Davies, 1978; Schoenfeld et al., 1979; Trop and Roos, 1971).

Underlying and facilitating these phenomena were two broad societal trends. First, growing affluence led to a decline in materialistic values and an increased concern with quality-of-life issues such as recreation and environmental amenities (Watts and Wandesforde-Smith, 1980). Second, more than a decade of civil rights and antiwar activism created a conducive atmosphere—both a sense that change is possible and a search for a less conflictual issue—for the mobilization of widespread support for environmental protection (Schnaiberg, 1973). The mobilization occurred with preparations for the first Earth Day, an activity spearheaded by Senator Gaylord Nelson and Congressman Mike McCloskey and led by a student-oriented organization that evolved into Environmental Action (a major organization still in existence). The April 22, 1970, celebration of "E-Day" is estimated to have involved twenty million participants, an unprecedented level of environmental activism, and more than any other event before or since, it thrust environmental quality into public prominence (see, e.g., Dunlap and Gale, 1972; Dunlap and Mertig, 1992).

The effect of all of this on public opinion is illustrated by several sets of trend data, summarized in table 4.1. The first set, Gallup polls conducted in

Table 4.1 Trends in Public Concern for Environmental Quality, Mid-Sixties to 1970

		Percent Response by Year					
National Studies		'65	'66	'67	'68	'69	'70
Gallup[a]	"Reducing pollution of air and water" selected as one of three national problems that should receive attention of government	17	—	—	—	—	53
Opinion Research Corporation[b]	Air/water pollution viewed as "very or somewhat serious" in the area:						
	a. air pollution	28	48	53	55	—	69
	b. water pollution	35	49	52	58	—	74
Louis Harris[c]	"A lot or some" air pollution thought to exist in the area			56	—	—	70
Louis Harris[d]	Willing to pay $15 a year more in taxes to finance air pollution control program			44	—	—	54
Louis Harris[c]	"Pollution control" selected as government spending area "least like to see cut"					38	55

[a] See Mitchell 1980:404 for question wording and complete results.

[b] See Erskine 1972b:121.

[c] See Erskine 1972b:123.

[d] See Erskine 1972b:132.

[e] See Erskine 1972b:129.

1965 and 1970, shows that the percentage of the public selecting "reducing pollution of air and water" as a problem that should receive the attention of government more than tripled (from 17 to 53 percent) during those five years. Almost as impressive an increase is documented in a series of Opinion Research Corporation (ORC) surveys covering the same period: the percentages viewing air and water pollution as "very or somewhat serious" in their vicinity more than doubled, from 28 to 69 percent for air pollution and from 35 to 74 percent for water pollution. A bit less impressive was the increase in the percentage responding that there was "a lot" or "some" air pollution in their area, from 56 to 70 percent, in 1967 and 1970 Harris surveys. Yet, note that the Harris and ORC questions focused on perceived levels of pollution in the respondent's vicinity, whereas the Gallup question focused on national priorities. It seems logical that the former would be influenced somewhat more by actual conditions than would the latter, and since there was very little change in actual pollution levels during this period, the increases found by Harris and especially ORC are impressive.

The Harris surveys also asked respondents if they would be willing to pay fifteen dollars a year more in taxes for an air pollution control program, perhaps a somewhat more stringent measure of personal commitment to environmental protection. The 1967 to 1970 increase in the percentage "willing" rose from 44 to 54, while the percentage "unwilling" dropped from 46 to 34 ("not sure" rose from 10 to 12 percent). The last set of Harris data covers only seven months, from August 1969 to March 1970, but reflects the impact of the mobilization for Earth Day on public opinion. Thus, the percentage selecting "pollution control" as one of the three or four government programs (from a list of ten) that they would "least like to see cut" increased by nearly half, from 38 to 55, during that short period of time.

These trend data, especially those covering 1965 to 1970, indicate how substantially public concern with environmental quality rose during the last half of the sixties. Especially notable is the fact that in the Gallup surveys the 17 percent selecting pollution reduction ranked it ninth among the ten problems in 1965, while the 53 percent selecting it in 1970 placed it second only to crime reduction. Such results led Erskine (1972b:120) to conclude that "[a] miracle of public opinion has been the unprecedented speed and urgency with which ecological issues have burst into American consciousness. Alarm about the environment sprang from nowhere to major proportions in a few short years." The results also suggest that by 1970 environmental quality had definitely moved from the pre-problem stage to the "alarmed discovery" stage of Downs's issue attention cycle, the point where the public clearly acknowledges the seriousness of a problem and enthusiastically supports efforts to solve it.

Drawing upon earlier terminology, it seems appropriate to argue that environmental protection had become a *consensual* issue by 1970, as majorities of the public expressed proenvironment opinions and tyically only small minorities expressed opinions in the antienvironment direction. Thus two-thirds to three-fourths of the public saw pollution as at least somewhat problematic in the 1970 survey by Opinion Research Corporation and the 55 percent selecting pollution control as one of the areas they would least like to see cut in the 1970 Harris survey overwhelmed the 3 percent who selected it as one they would most like to see cut. Even avowed willingness to pay fifteen dollars a year more in taxes to control air pollution quickly moved from a minority position in 1967 (44 percent willing versus 46 percent unwilling) to a strong majority position in 1970 (54 percent willing versus 34 percent unwilling). The high and consensual level of concern for environmental quality at the end of the decade is also reflected by a variety of cross-sectional data collected in 1969 or 1970 (see Erskine, 1972b).

Environmental quality had clearly achieved a position of prominence on the public agenda by 1970, and when queried about environmental issues, majorities of the public expressed proenvironment positions. But to what degree had environmental quality become a "salient" issue for Americans—to what extent was it on their minds? This is a difficult matter to judge, but many public opinion analysts have argued that *volunteered* responses to "most important problem" (MIP) questions—that is, open-ended questions that ask respondents what they see as the country's most important problem or problems—provide a good indicator of the salience of an issue (see, for example, Key, 1961:46; Lane and Sears, 1964:15; Peters and Hogwood, 1985:249). Not surprisingly, there are very few data on the salience of environmental quality in the sixties, and since the two available trend studies beginning in the sixties extend past 1970, I have summarized them in table 4.2, along with other longitudinal studies beginning in 1970.

The only study of the salience of environmental quality at the national level beginning in the sixties was Hornback's (1974) analysis of MIP data collected in the Michigan National Election Survey (NES), where respondents were encouraged (via probes) to mention up to three problems facing the country. Hornback found that only 2 percent of the public volunteered any type of environmental problem in 1968, an extremely low figure, given the survey results reported in table 4.1 for other types of indicators of environmental concern. In 1970 the comparable figure was 17 percent, representing a dramatic increase but still a fairly small proportion of the public. The only other study of MIP trend data beginning in the sixties was limited to the state of Wisconsin. As noted in table 4.2, Buttel (1975a; 1975b) reported that the percentage of Wisconsin residents volunteering environmental problems as one of the two most important facing their state rose considerably, from 17 to 40, between 1968 and 1970. While the pattern of substantial increase in Wisconsin was similar to that found at the national level, the absolute levels in that state were much higher than at the national level both years. Whether the higher figures for Wisconsin reflect a far higher than average level of environmental concern in that state, or differences in survey methodologies (or both), is difficult to determine.

Table 4.2 Trends in Public Concern for Environmental Quality, Late Sixties to Mid-Seventies

		Percent Response by Year								
		'68	'69	'70	'71	'72	'73	'74	'75	'76
National Studies										
Michigan National Election Survey[a]	Pollution, ecology, etc., volunteered as one of the country's "most important problems"	2	—	17	—	10				
Louis Harris[b]	Pollution, ecology, etc., volunteered as one of "the two or three biggest problems facing people like yourself"			41	—	13	11	9	6	
State Studies										
Wisconsin[c]	Environmental problems volunteered as one of two most important facing the state	17	—	40	—	15	—	10		
Washington panel[d]	Favor government spending "more money" on									
	a. pollution control			70	—	—	—	32		
	b. protection of natural resources			52	—	—	—	37		
Washington trend[e]	"Reducing air and water pollution" selected as one of two or									

Table 4.2 Continued

	Percent Response by Year								
	'68	'69	'70	'71	'72	'73	'74	'75	'76
three most serious problems in									
a. state			44	—	—	—	—	—	18
b. respondent's community			23	—	—	—	—	—	15

[a] See Hornback 1974:87, 233–34 for question wording and response coding.

[b] See Mitchell and Davies 1978:fig. 2 for question wording and complete results.

[c] See Buttel 1975a:83–85; 1975b:58 for question wording and response coding.

[d] See Dunlap and Dillman 1976:383–84 for question wording and complete results.

[c] See Dunlap and Van Liere 1977:110 for question wording and complete results.

The situation is not helped when the 1970 data from these studies are compared to two other sets of MIP data beginning in 1970. First, Harris began reporting the results of an MIP question in late 1970, and, as shown in table 4.2, fully 41 percent of a national sample volunteered some type of environmental problem as one of the "two or three biggest problems" facing them in 1970—a figure comparable to the Wisconsin results. In contrast, three 1970 Gallup surveys included a question asking about the *single* MIP facing the country, and the percentages mentioning environmental problems ranged from only 2 to 10 (prior to 1970 Gallup did not list environmental problems among MIP results, presumably because the percentages mentioning them were too small to warrant doing so—see Hornback, 1974:220–21). The results of the Gallup surveys, taking into account that they asked for only *one* MIP, thus seem more in line with the results of the Michigan NES reported by Hornback.

The discrepant results obtained on MIP questions, especially those between the results of the Michigan NES and Harris surveys in 1970, are difficult to reconcile. They do not seem attributable, for example, to differences in the wording of the MIP questions. Despite the inconsistency in results, however, two conclusions can be drawn from the available MIP data: first, the salience of environmental problems increased significantly from 1968 to 1970; second, even in 1970 only a minority (albeit a large one in some surveys) volunteered environmental problems when asked what they saw as the most important problems facing the country (or, in the Wisconsin survey, the state of Wisconsin). The latter finding contrasts sharply with the results reported in table 4.1 for other indicators of environmental concern and suggests that even around the time that our nation was celebrating the first Earth Day the salience of environmental problems did not match that of the traditionally dominant worries about war (in this case, Vietnam) and the economy (Erskine, 1972b:120; Hornback, 1974:223).

Overall, then, the data suggest that public concern for environmental quality escalated rapidly in the sixties, and by 1970 majorities of the public were expressing proenvironmental opinions ranging from acknowledging the seriousness of pollution to supporting governmental efforts to protect and improve the environment. However, despite the relatively strong consensus in support of environmental protection and the increased salience of environmental problems in 1970, the state of the environment was viewed by only a minority of the public as one of the nation's most important problems. From a social movements perspective, it appears that a majority of the public was sympathetic to the environmentalists' goal of protecting the environment and a sizable minority was explicitly attentive to environmental issues.

The Early Seventies

As the high level of environmental activism stimulated by Earth Day, such as community cleanups and recycling drives, inevitably began to lose momentum, several commentators suggested that public concern for environmental protection would likewise decline. The most influential was Downs (1972), who—as noted earlier—suggested that by 1972 environmental quality had already passed from the stage of alarmed discovery and enthusiastic support into one of somber realization of the costs of environmental protection and improvement—both in terms of lifestyle and of purely economic adjustment.

The situation surrounding the problem of environmental quality certainly seemed conducive to its passing through the issue attention cycle in the early seventies. As noted previously, at the end of 1969 the National Environmental Policy Act (NEPA), establishing the President's Council on Environmental Quality and requiring the preparation of the now-famous "environmental impact statements" for federal actions, was passed, and in 1970 the U.S. Environmental Protection Agency was established. Congress continued to pass important environmental legislation over the next couple of years (Fessler, 1990), and most states followed the federal government's lead by passing environmental protection legislation (often including "little NEPAS") and establishing environmental agencies of their own (Haskell and

Price, 1973). These governmental efforts on behalf of environmental protection involved the expenditure of large sums of money and provoked increasing complaints from the private sector that environmental protection was hampering economic growth and contributing to the escalating inflation rate. In addition, it was becoming clearer that solving pollution and other environmental problems was not going to be easy, requiring changes in personal lifestyles as well as industrial and governmental practices (Morrison, 1980; Schnaiberg, 1980:chap. 8). Finally, media attention to environmental issues began to decline significantly after 1970 (Davies, 1977:92; Schoenfeld et al., 1979:48). The setting was ripe for environmental quality to pass through the final stages of Downs's issue attention cycle, especially when the "energy crisis" of 1973–74 quickly moved to the top of the public agenda.

What, in fact, happened to public concern for environmental quality in the years immediately following 1970 and the first Earth Day? Sadly, the data needed for providing anything approximating a definitive answer to this question are not available. Not only did pollsters often stop asking questions they had used in the sixties, but surprisingly—given the prominence of environmental issues at the time—they failed to start asking new questions in 1970 to provide a baseline for following changes in environmental concern throughout the seventies. The situation led Erskine (1972b:120) to express consternation over the failure of public opinion pollsters to develop good trend data on environmental issues, and it forces us to rely on the very limited body of data shown in table 4.2.

I have already referred to three of the data sets reported in table 4.2: the two national studies and the Wisconsin study. All three employed MIP questions, and they all show a similar pattern: the salience of environmental problems declined substantially by 1972 from its peak in 1970, and even further by 1974–75. The patterns in the national Harris data and the Wisconsin data are especially similar and indicate that the proportion of the public volunteering environmental problems as among the nation's/state's most serious problems declined from a large minority in 1970 to a small minority (10 percent or less) by mid-decade. A similar pattern was found in Gallup surveys employing an MIP question asking for the *single* most important problem. As noted earlier, the percentage volunteering environmental problems reached a peak of 10 in 1970; it then fluctuated between 7 and 2 during 1971 and 1972 (Hornback, 1974:221). Unfortunately, in 1973 Gallup began asking respondents to name the *two* MIPS, making comparisons with prior years impossible. Nevertheless, the environment continued to show up low on the list of two MIPS throughout 1973, and it dropped further in 1974—replaced by "energy" (Rosa, 1978). (The percentage mentioning the energy shortage also exceeded the percentage mentioning environmental problems in the Harris surveys beginning in 1974—Mitchell and Davies, 1978:fig. 2.)

I noted earlier that public opinion analysts tend to regard responses to MIP questions as good indicators of the salience of an issue to the public. But it has been suggested that responses to such questions are especially susceptible to media attention to particular problems (Funkhouser, 1973) and that—more broadly—salience as measured by MIP responses "is transitory for all but the most momentous issues such as war or depression" (Mitchell, 1984b:55). Since media attention to environmental problems did decline considerably in the early seventies (Davies, 1977:92; Schoenfeld et al., 1979:48), perhaps these trends reflect little more than the public's susceptibility to the agenda-setting function of the mass media (and, implicitly, to the inadequacy of MIP questions as valid indicators of public concern about social problems). Some analysts of environmental concern have, in fact, suggested that the obvious decline in the salience of environmental problems was *not* matched by decline in strength of commitment to environmental protection (Mitchell, 1984b:54–55).

Amazingly, the only two sets of data available for testing this possibility are limited to the state of Washington, as I have been unable to find a single set of national trend data using something other than an MIP question. Fortunately, the two Washington studies used very different indicators of concern for environmental quality, but nonetheless produced similar results. In both cases a fairly sharp decline in environmental concern was found by mid-decade, although not quite as great as registered in the MIP indicators. The first set of data is from a panel study that compared the priorities for spending government funds in 1970 and 1974 as indicated by over 1,600 Washington state residents. "Pollution control" and "protection of forests and other natural areas for public enjoyment" were two of fifteen areas on which respondents were asked whether they wanted "more," the "same," or "less" tax money spent. As shown in table 4.2, the percentage wanting more spent on pollution control declined by more than half, from 70 to only 32, while the percentage wanting more spent on natural resources declined by nearly a third, from 52 to 37, over the four years. In short, the Washington panel study found a substantial decline in public endorsement of support for environmental protection.

The Washington trend study compared different samples of over eight hundred residents in 1970 and 1976 in terms of their selection of "reducing air and water pollution" as "one of the two or three most serious problems" facing their state and their communities from a list of eleven potential problems (as opposed to volunteering responses to an MIP question). At the state level there was a very large decline in the percentage selecting reducing pollution, from 44 to 18, over the six years. At the community level there was a far smaller decline, from 23 to 15 percent, due in part to the fact that respondents were so much less likely to see pollution as a community problem to begin with (a pattern found in other studies—see March, 1974).

In short, the two Washington state studies found that public concern for environmental quality, measured by both spending priorities and perceived seriousness of environmental problems, declined substantially between 1970 and mid-decade. Especially noteworthy is the fact that in the 1970–74 panel study not only did the percentage wanting more spending on pollution control decline from 70 to 32, but the percentage wanting less spending in this area increased from 5 to 21. While great caution is called for in generalizing from a single state to the entire nation, the Washington results suggest a deterioration of the strong consensus on behalf of environmental protection surrounding the first Earth Day in 1970.

The decline in public consensus for environmental protection in the early seventies paralleled the growth of organized opposition to the environmental movement (Albrecht, 1972; Morrison, 1973). Yet care should be used in attributing a decline of environmental concern among the general public to the opposition's efforts to blame economic problems and the energy shortage on excessive environmental protection. Indeed, the panel study (which followed the same individuals over time and thus allowed for an examination of predictors of decline in support for environmental protection spending) found little evidence of an "ecological backlash." Whether or not respondents viewed environmental protection as contributing to economic problems and the energy shortage was a poor predictor of declining support for environmental spending; a better predictor was whether or not they viewed environmental problems as less serious in 1974 than in 1970 (Dunlap et al., 1979). These findings suggest that Washingtonians' decline in support for environmental spending over the four years stemmed more from their belief that past spending had been successful in improving environmental conditions (and that *increased* spending was therefore unnecessary) than from their blaming environmental protection for economic and energy problems.

In sum, while the available evidence on trends in environmental concern in the early seventies is admittedly sparse and often based on single states, it consistently indicates a significant decline in public concern about environmental quality in the years immediately following 1970. The evidence thus supports both Downs's (1972) contention that by 1972 environmental quality was about halfway through the issue attention cycle and his prediction that it would shortly move into the fourth stage—the decline of intense public interest. However, whereas Downs emphasized that public recognition of the costs of environmental improvements would lead to decline in public concern, the results of the Washington panel study suggest an alternative explanation: public concern over environmental problems declined because the public thought they were being solved, presumably because laws were passed, agencies were established, and money was spent to solve them. This "natural decline" explanation complements rather than contradicts Downs, for it points to an alternative cause of the fall-off in public concern for environmental quality. As we shall see later, more recent trends in environmental concern appear to have been influenced by public perception of changes in governmental efforts to protect environmental quality.

Mid-Seventies to 1980

I now turn to several studies that tracked environmental concern from the early or middle part of the seventies through the end of the decade. Their results will indicate whether environmental concern continued to fall off throughout the decade and, if so, whether the rate of decline was as steep as in the early seventies. The data will also help in evaluating whether environmental quality reached the final, "post-problem" stage of the issue attention cycle. In reviewing these studies, however, it must be kept in mind that they began at least two or three years after Earth Day, at a time when—judging from data reviewed in the prior section—environmental concern had already declined a fair amount. Some analysts of environmental concern have ignored this fact.[2]

Four sets of trend data, beginning in 1972 or 1973 and extending through the end of the decade, and one covering 1976 to 1979 are shown in table 4.3. The first set of data includes biennial nationwide surveys conducted for Potomac Associates by Gallup from 1972 through 1976, plus a follow-up survey conducted by Mitchell for the U.S. Council on Environmental Quality (CEQ) in 1980. The surveys asked respondents how worried or concerned they were with a number of domestic issues, including "cleaning up our waterways and reducing water pollution" and "reducing air pollution." As shown in table 4.3, the Potomac surveys found a noticeable decline in the percentage indicating "a great deal" of concern from 1972 to 1974, but

Table 4.3 Trends in Public Concern for Environmental Quality, Early Seventies to 1980

	Percent Response by Year								
National Studies	'72	'73	'74	'75	'76	'77	'78	'79	'80
Potomac-CEQ[a]									
Concerned a great deal about									
a. water pollution	61	—	51	—	57	—	—	—	39
b. air pollution	60	—	46	—	55	—	—	—	36
Roper[b]									
More on the side of									
a. protecting environment		37	39	39	44	35	—	38	36
b. adequate energy		37	41	40	33	43	—	43	45
Roper[c]									
Environmental protection laws and regulations have gone									
a. not far enough		34	25	31	32	27	—	29	33
b. too far		13	17	20	15	20	—	24	25
NORC[d]									
Spending on improving and protecting the environment:									
a. too little		61	59	53	55	48	52	—	48
b. too much		7	8	10	9	11	10	—	15
Cambridge[c]									
Sacrifice environmental quality or sacrifice economic growth:									
a. sacrifice economic growth					38	39	37	37	—
b. sacrifice environmental quality					21	26	23	32	—

[a] See Mitchell 1980:413 for question wording and complete results.

[b] Volunteered responses of "neither," "no conflict," or "don't know" are not shown. Also, in some years Roper asked this question more than once, but only the results from surveys conducted in September of each year are reported. See Gillroy and Shapiro 1986:275 for question wording and complete results.

[c] Percentages responding "struck about right balance" or volunteering "don't know" are not shown. See Dunlap and Scarce 1991:664 for question wording and complete results.

[d] Percentages responding "about right" or volunteering "don't know" are not shown. See Dunlap and Scarce 1991:664 for question wording and complete results.

[c] Percentages volunteering "don't know" are not shown. See Dunlap and Scarce 1991:668 for question wording and complete results.

then an upturn two years later that put the 1976 levels of concern only a few percentage points below the 1972 levels (57 versus 61 percent for water pollution and 55 versus 60 percent for air pollution). The 1980 CEQ survey, in contrast, found far lower levels of concern four years later: only 39 percent indicated a great deal of concern about water pollution, and only 36 percent the same degree of concern about air pollution.

Whereas the above figures suggest a substantial decline in concern about pollution in the last half of the seventies, Mitchell (1980:412) urges caution in drawing this conclusion. He points out that, in contrast to the Potomac surveys, in the 1980 survey he conducted for CEQ, the question containing the two pollution items was immediately preceded by two questions in which respondents were asked to rank pollution relative to other domestic problems. Mitchell suggests that this placement of the Potomac question may have inadvertently dampened the levels of concern expressed about air and water pollution. As evidence he notes that a national Roper survey conducted two months after his CEQ survey found 54 percent expressing a great deal of concern over "cleaning up our waterways and reducing water pollution" only 3 percent lower than the 1976 figure. Yet, since the Roper survey did not ask about the full range of domestic issues covered in the original Potomac question, it is possible that comparability of responses was again compromised somewhat by question context. At any rate, while great caution is obviously called for, the Potomac-CEQ surveys indicate at least a modest and—if one is willing to take the 1980 data at face value—possibly substantial decline in concern about air and water pollution from 1972 to 1980.

The conclusion that there was at least modest decline in environmental concern from the early seventies through 1980 is consistent with the other sets of data in table 4.3. First, in late 1973 (reflecting the emergence of the energy crisis) Roper began asking a trade-off question in which respondents were asked if they were "more on the side of producing adequate energy or more on the side of protecting the environment." For the sake of brevity I have reported only the percentages for these two positions, deleting the sizable percentages who either *volunteered* "neither" or "no conflict" or indicated "don't know." In 1973 the two positions received equal levels of support (37 percent each), but after that the percentages siding with adequate energy began to exceed that siding with environmental protection (with the exception of 1976). By 1980 the gap had reached a modest 9 percent (45 versus 36), indicating that worries about energy adequacy had clearly exceeded concern about environmental protection—but had not caused an erosion of support for environmental protection as many people expected, for the latter held virtually constant from 1973 to 1980.[3]

Interestingly, the second Roper question, asking respondents whether they think "environmental protection laws and regulations have gone too far, or not far enough, or have struck about the right balance," shows a more substantial decline in environmental concern. Table 4.3 shows the percentages indicating "not far enough" or "too far," with the percentages indicating "about right" or "don't know" deleted for brevity and readability. In 1973 the percentage indicating that environmental protection efforts had not gone far enough sharply exceeded that indicating that such efforts had gone too far (34 versus 13). The gap quickly began to close (with the exception of a temporary growth in 1976) and reached a low point of only 5 percent in 1979 (29 versus 24).

The next set of data in table 4.3 comes from a question used in National Opinion Research Center (NORC) surveys in which respondents are given a long list of problems facing our nation and asked if we're spending "too much money on it," "too little money," or "about the right amount" on each one. Surprisingly, as late as 1973 the percentage indicating that too little was being spent "on improving and protecting the environment" overwhelmed the number indicating that too much was being spent in this area: 61 versus 7 percent (the percentages indicating "about right" or "don't know" are not shown). In subsequent years there was a modest but fairly consistent decline in the percentage indicating "too little," and a small but relatively consistent increase in the percentage indicating "too much," through 1980. The result is that the initial 54 percent difference between these two positions in 1973 (61 versus 7) declined to 33 percent by the end of the decade (48 versus 15).

The fourth poll, which Cambridge Reports, Inc., did not use until 1976, poses a trade-off between economic growth and environmental quality. It asks respondents whether we must "sacrifice environmental quality for economic growth," or whether we must "sacrifice economic growth in order to preserve and protect the environment." In 1976 the public was almost twice as likely to prefer sacrificing economic growth for environmental quality as vice versa (38 versus 21 percent). While the percentage choosing to sacrifice economic growth for environmental quality held nearly constant over the next three years, the percentage indicating a willingness to sacrifice environmental quality steadily grew (with a consequent decline in the large proportion of volunteered "don't knows," which are not shown). The result is that by 1979 the proenvironment position ("sacrifice economic growth") had only a 5 percent margin over the progrowth position, 37 versus 32 percent.

The data covering the seventies in table 4.3 provide a generally consistent view of trends in environmental concern from the early part of the mid-seventies to the end of the decade: modest but continual decline in public support for environmental protection. These results, coupled with those reviewed in the two prior sections, suggest the following evolution of public concern with environmental quality: after growing rapidly in the late sixties, such concern appears to have reached a peak in 1970 following the first Earth Day; it then experienced a fairly sharp decline in the early part of the seventies, followed by a much more gradual decline through the rest of the decade.

The long-term trend I have just sketched is supported by one final piece of longitudinal data (covering too long a time period to be summarized in these tables). The 1980 CEQ survey repeated the question used by Gallup in 1965 and 1970 listed in table 4.1. Recall that respondents were given a list of ten national problems, including "reducing pollution of air and water," and asked to indicate which three they wanted to see government devote most of its attention to in the next year or two. As I noted previously, reducing pollution was selected by only 17 percent in 1965, ranking it ninth out of the ten problems; in 1970 it was selected by 53 percent, sending it to second. A decade later, in the 1980 CEQ survey, reducing pollution was selected by 24 percent, ranking it sixth in the same list of ten problems (Mitchell, 1980:404).

While the Gallup-CEQ results suggest that by 1980 environmental concern had declined from its 1970 peak to a level only moderately above its 1965 "pre-problem" level, care should clearly be used in drawing such a conclusion from a single item. There are three reasons for this. First, the 1970 Gallup survey was conducted in late April, *immediately* after Earth Day. Second, changing societal conditions no doubt influenced the public's priorities over the course of the seventies. For example, "reducing unemployment" jumped from a tie for seventh place to second (25 percent to 48 percent) from 1970 to 1980, reflecting the substantial deterioration of the economy during the decade. Third, the results in table 4.3—especially those for the NORC spending item—as well as a large amount of cross-sectional data (see, e.g., Mitchell, 1980) indicate the existence of a substantial degree of environmental concern in 1980. Thus, the comparison of the 1970 Gallup findings and 1980 CEQ survey likely exaggerates the degree of decline in environmental concern during the seventies. Nonetheless, the overall trend suggested by the Gallup-CEQ results is compatible with the conclusions I drew from the studies summarized in tables 4.1, 4.2, and 4.3: a very sharp rise from 1965 to 1970, followed by a decline (apparently fairly sharp at first, then much more gradual) throughout the rest of the decade, but not down to the "pre-problem" level of the mid-sixties.

In view of the foregoing data, should we conclude that by the end of the "environmental decade" (as the seventies have been termed) public concern for environmental quality had moved into the "post-problem" stage of the issue attention cycle? This is not an easy question to answer, largely because Downs (1972:40) vaguely defines the final stage as when "an issue that has been replaced at the center of public concern moves into a prolonged limbo—a twilight realm of lesser attention or spasmodic recurrences of interest." Clearly if one were to judge public concern by "salience," as measured by MIP questions, then one should conclude that environmental quality had moved into the post-problem stage—indeed, it apparently did so as early as 1974 when it was supplanted by the energy crisis. However, the fact that the data in table 4.3 indicate at least moderate levels of public concern with environmental quality throughout the decade, long after "environment" had disappeared from the list of most frequent responses to MIP questions,[4] suggests that salience may be a poor indicator of public concern for social problems. Even though it is the aspect of public opinion that best reflects the issue attention cycle, salience may well be unduly influenced by mass media coverage, as argued by Funkhouser (1973).

Even if one ignores the salience dimension, it is difficult to determine if environmental quality had entered the post-problem stage at the end of the decade.[5] First, note that Downs (1972:41) refers to this stage as a "realm of lesser attention"; second, he later adds that "problems that have gone through the cycle almost always receive a higher average level of attention, public effort, and general concern than those still in the pre-discovery stage." The data reviewed thus far, indicating that environmental concern was lower at the end of the seventies than at the beginning of the decade, but still higher than in the mid-sixties, would thus seem to indicate that environmental quality was at least nearing the post-problem stage by the late seventies (see Anthony, 1982:19).

Regardless of what one concludes about the issue attention cycle, it is apparent from table 4.3—and a large amount of cross-sectional data collected in the late seventies (see, for example, Mitchell, 1980)—that while public concern for environmental quality had become less consensual it had by no means disappeared by the end of the seventies. Even though the data can clearly be interpreted differently, depending upon whether one emphasizes the decline or the endurance of environmental concern throughout the decade, I would generally agree with Mitchell's (1980:423) assessment of the situation in 1980: "Although the state of the environment is no longer viewed as a crisis issue, strong support for environmental protection continues. . . . [F]ar from being a fad, the enthusiasm for environmental improvement which arose in the early 1970s has become a continuing concern." Indeed, I think that public concern for environmental quality showed impressive staying power in the face of a continuing series of essentially competing concerns: the energy crisis of 1973–74 and continuing concerns about energy supplies throughout the decade, a worsening economic situation, and a "taxpayers' revolt" begun by California's Proposition 13 in 1978 (Mitchell, 1984b).

Besides surviving the challenges of these competing concerns reasonably well, public support for environmental protection also survived the fruits of its own success—namely, the "natural decline" expected from public apathy due to continued governmental efforts to protect and improve environmental quality throughout the decade. Thus, given the growth in governmental expenditures for environmental programs in the seventies, it may be surprising that the percentage indicating that "too much" was being spent in this area in the NORC surveys did not decrease even more. Similarly, given the continuing passage of additional environmental legislation such as the Endangered Species Act, and the publicity received by issues such as the snail darter and Tellico Dam, it may be surprising that an even larger percentage did not indicate that environmental laws and regulations had gone "too far" in the Roper surveys (see, for example, Conservation Foundation, 1980). Particularly during the Carter administration, which saw the appointment of numerous environmental advocates to prominent governmental positions (Baldwin, 1977), the public had reason to believe that government was "taking care of" environmental problems. Under such conditions some decline in public concern for environmental quality would be expected, even in the absence of competing concerns.

The Eighties to the Early Nineties

The federal government's orientation toward environmental protection changed considerably when Ronald Reagan took office in 1980. Environmentalists were wary of President Reagan because of his general emphasis on "deregulating" the economy, and because of his tendency to view environmental regulations in particular as hampering economic growth and as largely unnecessary (Holden, 1980). The Reagan administration quickly fanned the fears of environmentalists, changing course after a decade of generally bipartisan commitment to federal environmental protection. The Council on Environmental Quality was virtually dismantled, the budget of the Environmental Protection Agency was severely cut, and the enforcement of existing environmental regulations was curtailed by administrative review, budgetary restrictions, and staff changes. It was the latter that received the most attention, as the appointment of Anne Gorsuch as director of the EPA and James Watt as secretary of the Department of Interior symbolized the administration's commitment to changing the thrust of environmental policy, with Gorsuch easing the burden of environmental regulations on industry and Watt opening up public lands to increased resource development (Thompson, 1985; Vig and Kraft, 1984).

Not surprisingly, environmentalists were upset by the Reagan administration's environmental policies, and began to vigorously oppose and criticize them. Perhaps most notable was the issuance in 1982 with considerable publicity of a report, *Ronald Reagan and the American Environment,* prepared by ten of the nation's largest environmental organizations and termed an "indictment" of the Reagan administration's environmental policies (Friends of the Earth, 1982). Similarly, opposition to these policies grew in Congress, where efforts were made to restore budget cuts and oversee effective enforcement of regulations. Most significant, of course, was the congressional investigation of the EPA's handling of "Superfund," which led to the resignation of Gorsuch and several other EPA administrators (see Szasz, 1986). Similarly, congressional criticism of James Watt led to pressure for his resignation, although the precipitating event was an ethnic slur that he made rather than Interior's policies.

In the face of mounting criticism, the Reagan administration defended its environmental initiatives in terms of its "electoral mandate," arguing that the president's landslide victory was evidence of the voters' approval of his efforts to get the economy going again by freeing it from the burdens of governmental regulations, including environmental ones (Kraft, 1984). President Reagan was a vigorous spokesman for his policy of deregulation and made the issue a test of his leadership. Since public opinion analysts have long recognized political leaders as a potent influence on public opinion (Pierce et al., 1982:30–33), it might be expected that a popular president would succeed in convincing the American public that environmental regulations had gone too far and were hampering the economy.

However, as the six sets of trend data in table 4.4 clearly indicate, President Reagan was not successful in lowering the American public's commitment to environmental protection in favor of the economy. Indeed, quite the contrary seems to have occurred during the Reagan era and on into the Bush administration. Each series of studies shows a pattern of increasing public commitment to environmental protection during the two administrations.

In the Roper question that asked people whether they supported environmental protection over adequate energy, there was a 10 percent increase

Table 4.4 Trends in Public Concern for Environmental Quality, 1980–1992

National Studies	Percent Response by Year												
	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92
Roper[a]													
More on the side of													
a. protecting the environment	36	40	46	—	—	—	—	—	—	57	52	—	—
b. having adequate energy	45	39	35	—	—	—	—	—	—	24	24	—	—
Roper[b]													
Environmental protection laws and regulations have gone													
a. not far enough	33	31	37	48	—	—	—	—	—	55	54	—	52
b. too far	25	21	16	14	—	—	—	—	—	11	11	—	11
NORC[c]													
U.S. spending on improving and protecting the environment:													
a. too little	48	—	50	54	58	58	58	61	65	70	71	68	—
b. too much	15	—	12	8	7	8	6	6	5	4	4	5	—
Cambridge[d]													
Sacrifice environmental quality or sacrifice economic growth:													
a. sacrifice economic growth	—	41	41	42	42	53	58	57	52	52	64	63	56
b. sacrifice environmental quality	—	26	31	16	27	23	19	23	19	21	15	18	19
CBS/ *N.Y. Times*[e]													
Environmental improvements must be made regardless of cost:													
a. agree		45	52	58	—	—	66	—	65	74	74	—	67
b. disagree		42	41	34	—	—	27	—	22	18	21	—	29

Table 4.4 Continued

National Studies	Percent Response by Year '80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92
Cambridge[f]													
Amount of environmental protection by government:													
a. too little			35	44	56	54	59	49	53	58	62	60	55
b. too much			11	9	8	10	7	12	12	9	16	16	22

[a] See footnote b for table 4.3. Results for 1989 and 1990 provided by the Roper Organization.

[b] See Dunlap and Scarce 1991:664 for results through 1990. Results for 1992 provided by the Roper Organization.

[c] See Dunlap and Scarce 1991:664 for results through 1990. Results for 1991 provided by NORC.

[d] See Dunlap and Scarce 1991:668 for results through 1990. Results for 1991 and 1992 provided by Cambridge Reports/Research International.

[e] Percents "don't know/no answer" are not shown. See Dunlap and Scarce 1991:668 for question wording and results through 1990. Results for 1992 provided by the *New York Times.*

[f] See Dunlap and Scarce 1991:664 for question wording and results through 1990. Results for 1991 and 1992 provided by Cambridge Reports/Research International.

in those siding with the environment and a comparable decrease in those siding with energy from 1980 to 1982. The 46 percent in favor of environmental protection in 1982 is the highest figure recorded with this item, and the 11 percent margin it enjoyed over energy adequacy matches the previous high point of 1976 (shown in table 4.3).

The results are impressive even though they span only a three-year period, because a major theme in the Reagan administration's environmental/resource policy was that environmental regulation must be relaxed to allow for the increased energy production needed for a strong economy (Axelrod, 1984). Even more impressive is that when Roper asked this question again at the end of the decade, during the Bush administration, public support for environmental protection had become the majority position, exceeding support for energy production by a greater than two-to-one margin.

The second Roper item, asking respondents if "environmental protection law and regulations have gone too far, or not far enough, or have struck about the right balance," provides an even more direct indicator of the public's evaluation of the government's environmental policy agenda.

The data indicate a growing rejection of the Reagan administration's position that such laws and regulations have gone too far. After reaching a low point in 1979 (see table 4.3), the margin between those indicating "not far enough" and "too far" increased in the first year of the Reagan administration (1981) and in each subsequent year through 1983 (when Roper stopped using the question for a period of five years). In 1982 37 percent said "not far enough," exceeding the previous high of 34 percent in 1973 (see table 4.3), while the 21 percent margin by which that position was now favored over "too far" equaled the 1973 margin. In 1983 the percentage indicating that environmental regulations had not gone far enough jumped to 48, greatly exceeding the 1973 high, while the percentage indicating that the regulations had gone too far dropped to 14, nearly matching the 1973 low of 13. When Roper began asking the question again at the end of the decade, support for environmental laws and regulations had increased even more, enjoying a five-to-one margin (54 versus 11 percent).

The next item in table 4.4, the NORC question on spending, is also pertinent for judging the impact of the Reagan administration's policy for the environment, since budget cuts for environmental agencies had been a major factor in that policy (Vig and Kraft, 1984). Although still fairly strong, support for increased spending on environmental protection reached a low point in 1980: only 33 percent more people said "too little" was being spent on protection than said "too much" was (48 versus 15 percent). The gap between the two positions had begun to increase by 1982, and in 1984 it reached 51 percent—matching the 1974 level and coming close to the 1973 high of 54 percent (see table 4.3). The gap remained remarkably stable in 1985 and 1986, despite the use of different item wordings for varying subsamples,[6] and then began to grow throughout the decade—reaching an overwhelming 67 percent (71 versus 4 percent) by 1990.

The fourth item in tables 4.3 and 4.4, from Cambridge Reports, Inc., asks the respondent to choose between economic growth and environmental quality. In 1979 the percentage preferring to sacrifice economic growth for environmental quality held only a slim advantage over those with the opposite preference (37 versus 32 percent). In the first year of the Reagan administration, however, the percentage preferring to sacrifice growth rose to 41, a new high, while those opting to sacrifice environmental quality dropped to 26 percent, a margin close to the one shown in 1976. Despite surprisingly large fluctuations over the next three years, the 1984 results were nearly identical to those of 1981. And although the results continued to fluctuate during the rest of the decade, the preference for sacrificing economic growth in favor of environmental quality generally rose while the opposing preference fell off. By 1990 the public was more than four times as likely to favor environmental quality over economic growth as the reverse (64 versus 15 percent), a far wider margin than in 1976. The public's preferences in this regard were clearly at odds with the two Republican administrations' priorities.

The CBS/*New York Times* poll began using an item on cost in September 1981, by which time the Reagan administration was under attack from environmentalists—especially for its agency appointments—but before its environmental policies had become the object of intense media attention via the Watt and EPA controversies. This item asked respondents to react to an extreme proenvironmental position, that environmental improvements should be pursued "regardless of cost." The public was almost evenly divided on the issue in 1981, but a year later those agreeing held an 11 percent lead (52 versus 41) over those disagreeing. By 1983 the gap had more than doubled to 24 percent, and in 1986 it reached nearly 40 percent (66 versus 27). By the end of the decade, nearly three-fourths of the public supported this proenvironment position, while only a fifth disagreed with it. Clearly, the Republican policy of emphasizing the economic cost of regulations was out of tune with public opinion on this issue.

The final item in table 4.4 was not used by Cambridge Reports, Inc., until March 1982. Like the second Roper item, it provides a good indicator of public reaction to the Reagan administration's overall environmental agenda, asking respondents if they thought there was "too much, too little, or about the right amount of government regulation and involvement in the area of environmental protection." From the outset the public rejected Reagan's contention that environmental regulations were excessive (by a margin of 35 to 11 percent), and this view became more pronounced through 1986, when the public overwhelmingly responded that there was too little rather than too much governmental regulation (59 versus 7 percent). Despite fluctuating since then, public endorsement of environmental protection by government has remained strong. These results, along with those for the NORC spending item discussed above, indicate that the public's views of the need for environmental regulations was quite different from those of the Reagan and Bush administrations.[7]

Taken together, the sets of data reported in tables 4.3 and 4.4 provide a consistent view of recent trends in public support for environmental protection. After declining moderately from the early to late seventies, public support for environmental protection began to rise shortly after the Reagan administration took office and—despite some fluctuations—continued to do so throughout the rest of the decade. The data also indicate that by 1990, when the twentieth anniversary of Earth Day generated unprecedented public interest and involvement in environmental issues (Dunlap and Mertig, 1992), clear majorities of the public supported increased environmental protection efforts and *huge* majorities opposed weakening current efforts by government to protect environmental quality. Not surprisingly, these exceptionally high levels of concern tailed off a bit over the next two years, both because the enormous attention to the environment generated by the twentieth Earth Day could not realistically be sustained and because of a "ceiling effect." The latter occurs when public opinion reaches extremely high (or low) levels, and there is little room for it to go higher (or lower). It is hard to imagine, for example, support for reduced funding for environmental programs dropping below the 4 percent found in the 1990 NORC survey.

Not only did environmental problems fail to enter the "post-problem" stage but they actually achieved a more central place on the public agenda than in the first peak of environmental concern in the early seventies. Tables 4.3 and 4.4 indicate that on the two Roper items and the NORC item the proenvironmental positions were stronger in 1990 than in 1972 and 1973. In addition, a small number of questions asked between 1970 or 1971 to 1990 (albeit infrequently) also reveal an increase. For example, the only data I have seen spanning the full twenty years is for the following Gallup question: "As you may know, it will cost a considerable amount of money to control pollution. Would you be willing to pay the slightly higher prices for your goods and services [that] business would have to charge to control pollution?" An overwhelming 79 percent responded "yes" in 1990, a notable increase over the 63 percent responding affirmatively in 1970. In addition, Cambridge found 23 percent *volunteering* environmental problems as one of "the two most important problems" facing the nation in the 1990 survey, exceeding the 17 percent found in the Michigan National Election Survey in 1970 reported in table 4.2 (Dunlap and Scarce, 1991:659, 669).[8]

Breaking the Issue Attention Cycle

In staging such a surprising comeback, environmental issues obviously managed to avoid the last stage of Downs's issue attention cycle, the "post-problem" stage, and reversed the "natural decline" that is the expected course for social problems. What seems to account for the remarkable staying power of environmental problems on the public agenda, compared to the typical social problem which quickly loses public attention and support? In other words, why has public concern about the environment remained so strong, and, especially, why did it increase throughout the eighties? The questions are complex and the answers cannot be definitive, but several interrelated factors appear to have contributed to the tenacity with which environmental problems have remained on our nation's agenda.

Reaction to Reagan's Antienvironmental Agenda

It seems likely that some of the increased support for environmental protection in the eighties stemmed from the public's apprehension that, unlike their predecessors, Reagan and to a lesser degree Bush could not be trusted to protect the environment. This apprehension was fueled by environmental organizations and the media and was especially pronounced in Reagan's first term due to the controversies over Watt at the Department of Interior and Gorsuch and colleagues at EPA (Dunlap, 1987; Mitchell, 1984b). The perception that the federal government cannot be trusted to protect the environment would be expected to produce unease among the public, for there is considerable data showing that the public views government as having primary responsibility for environmental protection (Dunlap, 1991). Consequently, when people can no longer assume that the government is taking care of a problem, they are more likely to become personally concerned and take action—as reflected by the large increases in the number of people joining environmental organizations in the eighties (Mitchell, et al., 1992).[9] Thus, consistent with the "natural decline" model presented earlier, which emphasizes the importance of governmental action, at least some of the increased environmental concern (and activism) of the eighties seems attributable to the public's belief that the two Republican administrations could not be counted on to protect the environment—just the opposite of what occurred during the staunchly proenvironmental Carter administration in the late seventies.

What is notable about the growth of environmental concern in the eighties is that it did not end after the controversies marking Reagan's first term subsided and federal environmental policies no longer received as much media scrutiny. Indeed, it grew especially rapidly in the latter part of the decade, toward the end of the Reagan administration and in the first half of the Bush administration. While the actual degree of change in environmental policy between the two administrations is open to debate, there is little doubt that in his 1988 campaign against Dukakis, George Bush temporarily shed the "antienvironmental" image of the Reagan era. This stance changed fairly quickly, and Bush eventually came to be seen—especially after his administration's unpopular performance at the 1992 Earth Summit in Rio de Janeiro and his campaign for reelection—to be nearly as antienvironmental as Reagan (Saad, 1992).[10] But the fact that public concern grew so quickly in the *late* eighties, when neither the Reagan nor Bush administration's environmental policies were as controversial as in Reagan's first term, suggests that factors other than reaction to perceived government failure to protect the environment was driving public opinion.

Worsening Conditions, Media Attention, and Environmentalism

Three key, interrelated factors were the continuing emergence of new environmental problems, media attention to these problems, and the continued vitality of the environmental movement. First, despite Reagan's efforts to downplay the seriousness of environmental problems, real-world events did not cooperate. Although the controversy at Love Canal first grabbed headlines in 1979, before Reagan came into office, it proved to be just the first installment in a series of widely publicized cases of human exposure to hazardous wastes that continued to emerge throughout the eighties. Growing concern with the threats to local water supplies posed by waste sites and chemical spills was reinforced by contamination of ocean beaches along the eastern United States and major oil spills (most notably the Exxon *Valdez*). Concern about local air pollution merged with awareness of acid rain and ozone depletion, and the protection of U.S. wilderness and wildlife gave way to concern with rainforest destruction. The possibility of global warming was recognized and then—in the eyes of many—verified by abnormally hot weather and drought (Ungar, 1992). In short, whereas environmental problems in the seventies often involved aesthetic issues (ranging from litter to wilderness) or localized air or water pollution, by the nineties the problems frequently represented a direct threat to human health and ranged from the local to global levels. In addition, they were increasingly seen as interrelated aspects of a complex "environmental problematique" stemming from humans' overuse of the environment, from local air, water, and land up to the global ecosystem. In short, "pollution" gave way to "ecological problems" and concerns about the natural environment expanded to worries about human health and well-being.

There is a wide variety of public opinion data, both trend and cross-sectional, to support these conclusions. For example, Cambridge national surveys found that the percentage agreeing that the overall quality of their local environment had worsened over the past five years increased from 34 in 1983 to 55 in 1990, and there were similar increases in fears about the contamination of water supplies. At the other end of the geographical continuum, Cambridge found the percentage agreeing that the "greenhouse effect" was serious (very or somewhat) rose from 43 to 75 between 1982 and 1989 (Dunlap and Scarce, 1991:659–61).

That such worsening environmental conditions were viewed as growing threats to humans is reflected in results from Roper national surveys that found that the percentage agreeing that "environmental pollution" is a "very serious threat these days to a citizen like yourself" increased from 44 in 1984 to 62 in 1989 (Dunlap and Scarce, 1991:659–61). More generally, a 1990 Hart/Teeter national survey found 76 percent saying that they "think the environment in the United States" had become "worse" and only 16 percent that it had become "better" over the last twenty years. Similarly, a 1990 Gallup national survey found only 14 percent saying that our country had made "a great deal" of progress in dealing with environmental problems over the past twenty years, and only 18 percent had a similar level of optimism that we would make great progress over the next twenty years (Dunlap, 1991:14–15). In short, the evidence indicates that over time the public has come to see both local and global environmental conditions as worsening, views these problems as threats to human welfare, and is pessimistic about future conditions and our ability to deal with them.

Secondly, all kinds of environmental problem have received enormous media attention in recent years (Mitchell, 1990:88–89). For example, during 1988–89 alone, *Newsweek* carried numerous cover stories on environmental problems, *U.S. News and World Report* (1988) had one on "Planet Earth: How It Works, How to Fix It," and *Time* (1989) captured the most attention by naming the "Endangered Earth" as "Planet of the Year" in lieu of its famous "Man of the Year" for 1988. Ungar (1992) has shown how scientists' warnings and abnormally hot weather generated media (and societal) attention to global warming in the late eighties, while Mazur and Lee (1993) have documented the huge increase in media attention given to the ensemble of global problems—ozone depletion, the greenhouse effect, and rainforest destruction—during this same time period.

The third factor underlying the staying power of environmental issues, the continued viability of the environmental movement, is intermeshed with all of the above. As noted earlier, environmental organizations played the key role in highlighting the Reagan administration's antienvironmental agenda and reaped substantial benefits in terms of new members and revenue in the process (see Mitchell et al., 1992, for data on their growth in membership through 1990). In addition, environmental organizations not only benefited from the continual emergence of new evidence of environmental degradation but contributed (directly and indirectly) to the discovery and, especially, the publicization of this evidence.

To appreciate these interrelated processes we need to view environmentalism not simply as consisting of environmental organizations, ranging from large national and international organizations such as the Sierra Club and Greenpeace to local anti-toxics groups and NIMBY ("not in my backyard") campaigns, but as what Morrison (1986) terms the "institutionalized environmental movement." By this he means the totality of institutionalized components of the movement: the government agencies, scientific organizations, academic programs, and media fora that have been generated by societal concern over environmental quality. Thus, federal agencies such as EPA and similar state-level agencies, organizations such as the National Association of Environmental Professionals, environmental education programs for K–12 and environmental studies programs in colleges and universities, and a vast array of publications ranging from scientific journals to popular magazines—and especially the policymakers, scientists, teachers, and journalists who run them—can be considered as "institutionalized" components or, at least, extensions of the environmental movement (as briefly recognized by Downs, 1972:41).

Government and university scientists, along with the growing number employed by environmental organizations such as the Environmental Defense Fund and the Natural Resources Defense Council, contribute to the discovery of new evidence of environmental degradation; staff at agencies such as EPA work to thwart administrators (such as Gorsuch at EPA) who attempt to change the agency's basic goals; and environmental educators and journalists publicize environmental problems and the need to ameliorate them. Whether viewed as pursuing narrow self-interest, or the public's welfare, such people clearly play a major role in keeping societal attention focused on the state of the environment. Their influence was largely underestimated by the Reagan and Bush administrations, but like the Sierra Club and other environmental organizations they have played a key role in keeping environmental problems on the public agenda and preventing their demise as predicted by the issue attention cycle.

Downs (1972:41–42) qualified his prediction that environmental issues would soon disappear into the post-problem phase by noting some unique characteristics of environmental problems, among the more important being that they are more visible and threatening and affect a greater proportion of citizens than do most problems, and that the ambiguity of "protecting the environment" allows it to encompass a variety of specific problems. As just discussed, these factors have proven to be far more significant than Downs could have foreseen. In addition, Downs (1972:41) noted that once problems have been on the national agenda they find it easier to get back on center stage than do new problems. Nonetheless, it seems unlikely that Downs could have imagined that two decades after it originally achieved enthusiastic support, environmental quality would hold an even more visible spot on the public agenda—as happened in 1990 with the twentieth Earth Day, which has been called the most successful effort to mobilize citizens around a single cause in history (Dunlap and Mertig, 1992:1).

All of this indicates that the issue attention cycle ought not be viewed as an inexorable process through which social problems evolve; instead, the fate of such problems is a function of several phenomena. By emphasizing the importance of media attention and public boredom, Downs underplayed the significant role of governmental action, the enduring influence of organized environmentalism, and the reality of objectively worsening environmental conditions. Perhaps most fundamentally, Downs did not foresee the degree to which concern about the environment would become institutionalized throughout society, thereby avoiding the fate of most fleeting social problems, and that environmentalism would become one of the most significant social movements of the twentieth century (Dunlap and Mertig, 1992). To get a better idea of the movement's success, the next section examines evidence concerning the public's identification with and participation in the movement.

The "Greening" of the Public: The Growth of Environmentalism

In many respects, one could argue that the environmental movement's greatest success has been in converting a majority of Americans to its cause. Not only do most Americans endorse proenvironmental policies, as shown in table 4.4, but even larger majorities have come to identify themselves with environmentalism per se. In addition, significant proportions have become active, in various ways, in support of environmental protection. Since these developments have special importance for environmental policy making, I will review them in some detail.

A simple indicator of the environmental movement's success in embedding itself within our society is the huge proportion of the public that identifies with the movement compared to those who oppose it. As shown in table 4.5, three recent Gallup surveys found approximately three-fourths of Americans answering "yes" when asked "Do you consider yourself to be an environmentalist or not?" and about half of those responded "yes" when subsequently asked "Would you say you are a strong environmentalist or not?" (Hueber, 1991:6). It is difficult to imagine such a high level of self-identification with any other contemporary social movement. Similarly, a 1992 national Roper survey asked, "Do you think of yourself as an active environmentalist, or sympathetic toward environmental concerns but not active, or neutral, or generally unsympathetic to environmental concerns?" The results are even more impressive, as 29 percent saw themselves as participants, 52 percent as sympathetic, 15 percent as neutral and only 2 percent as unsympathetic toward environmentalism. Another 2 percent said "don't know" (Roper Organization, 1992:55). A very similar item used in various national surveys between 1979 and 1983 found the combined percentages of "actives" and "sympathetics" ranging from 60 to 66 percent, the neutrals from 21 to 31 percent, and the unsympathetics from 4 to 8 percent (Mitchell, 1984, 1984b:63), indicating substantial growth in Americans' positive orientation toward environmentalism over the past decade.

In a similar vein, a 1991 national survey by Environment Opinion Study, Inc. (EOS) (1991:35) asked respondents, "Generally speaking, do you think of yourself as an environmentalist, an anti-environmentalist, or neither?" Respondents were then asked whether their identification was held strongly or not and, if they indicated "neither," whether they "leaned" toward one or the other label. Despite providing an alternative to the environmentalist label (whereas the Gallup item did not), the EOS survey found 60 percent accepting it, 31 percent "strongly" doing so, and another 30 percent leaning toward it—indicating that nine out of ten Americans were willing to identify themselves, at least weakly, as environmentalists. In contrast, only 5 percent were willing to identify themselves as "antienvironmentalist" (and four out of five of these only admitted to "leaning" toward that position).

The foregoing results are a striking indicator of how successful the environmental movement has been in gaining adherents and supporters, and especially of how it has become rare for people to identify themselves as opposed to environmentalism.[10] To use a concept introduced early in this chapter, it is apparent that the environmental movement has been extraordinarily successful in drawing a large majority of Americans into its active and sympathetic orbits. This lop-sided support for the environmental movement, shallow though it may be for some people, is a critical resource when environmentalists lobby government officials and a major barrier for opponents of environmental protection.

Table 4.5 Trends in Environmental Identification and Activism

National Studies	Percent Response by Year					
	’87	’88	’89	’90	’91	’92
Gallup[a]						
Self-identification as						
a. strong environmentalist			41	35	37	
b. environmentalist			35	38	41	
c. not an environmentalist			20	24	19	
d. no opinion			4	3	3	
Cambridge[b]						
Any member of household donated to or active in environmental organization:						
a. yes	15	17	22	40	39	
b. no	81	75	73	59	59	
c. not sure	4	8	5	1	2	
Cambridge[c]						
Changed behavior due to environmental concerns:						
a. yes	48	—	57	75	77	80
b. no	46	—	38	24	21	19
c. not sure	6	—	5	1	2	2
Gallup[d]						
Any member of household						
a. voluntarily recycled			78	85	86	
b. contributed money to an environmental group			49	49	51	
c. boycotted company’s products			29	28	28	
d. volunteer work for environmental group			16	18	18	

Table 4.5 Continued

	Percent Response by Year	
	'72	'90
Gallup[c]		
Have done in connection with problems of conservation and pollution:		
a. tried not to litter	87	96
b. talked with friends	52	73
c. recycled bottles or paper	33	80
d. voted for a candidate	10	33
e. contributed money	8	34
f. joined a conservation group	6	14
g. written to congressman	5	16
h. written letter to editor	2	6
i. picketed a store or business	1	4
j. none of these	8	1

[a] See Dunlap and Scarce 1991:670 for question wording and results through 1990, and Hueber 1991:6 for 1991 results.

[b] See Dunlap and Scarce 1991:670 for question wording and results through 1990, and Cambridge Reports/Research International 1991:6 for 1991 results.

[c] See Dunlap and Scarce 1991:670 for question wording and results through 1990, and Cambridge Reports/Research International 1992:18 for 1991 and 1992 results.

[d] See Dunlap and Scarce 1991:671 for question wording and results through 1990, and Hueber 1991:9 for 1991 results.

[e] See Dunlap and Scarce 1991:671 for question wording.

Not only are increasing proportions of Americans identifying with environmentalism, but significant and growing segments are participating in the movement to some degree. The second item in table 4.5, for example, is from recent Cambridge surveys asking respondents if they or another member of their household have "donated to or been active in a group or organization working to protect the environment." The impact of the 1990 Earth Day is apparent in the fact that 40 percent responded affirmatively, a figure that is compatible with the 29 percent claiming to be "active participants" in the Roper survey noted above, given that the Cambridge item focused on the household.

Although participation in environmental groups and organizations has traditionally been the dominant form of environmentalism, the late eighties saw a resurgence of a more personal strand of environmental activism—one captured long ago by the *Pogo* cartoon proclaiming, "We have met the enemy and he is us." In part due to the obvious shortcomings of relying on the Reagan and Bush administrations to protect the environment, a major theme of the twentieth Earth Day celebration was the need for individuals to adopt more environmentally benign lifestyles—for example, recycling, conserving, and buying "green" products (Rifkin, 1990). While few people seem to have made *major* alterations in their lifestyles, the popularity of such changes is illustrated by the third item in table 4.5. In recent Cambridge surveys, 75 to 80 percent of respondents claim to have made "changes in [their] day-to-day behavior because of [their] concerns about the environment." At a minimum, this suggests that large majorities of the public not only view themselves as environmentalists, but see themselves as doing at least a little on behalf of environmental protection.[11]

The fourth question in table 4.5, from Gallup surveys, reinforces the above findings, as it shows that huge majorities claim that in "recent years" their household has engaged in recycling (perhaps the easiest behavior), and half claim that someone in their household has contributed money to an environmental group. Not surprisingly, less than 20 percent claim that a member of their household did volunteer work for an environmental group, but nearly three out of ten say their household has "boycotted a company's products because of its record on the environment" (the flip side of buying environmentally friendly products).

In addition to joining environmental groups and changing lifestyles, the other major variety of environmental activism is political action. The last question in table 4.5 covers all of these types of activism and is of special interest because Gallup used it in 1990 after first featuring it in 1972. The results show a substantial increase in all aspects of environmental activism over the eighteen years and also a good sense of the relative popularity of the various activities. Again, simple lifestyle changes such as not littering and recycling are most popular, followed by voting for candidates on the basis of their environmental records and contributing money to environmental causes. Actually joining a group or writing to a member of Congress are reported less frequently, while writing a letter to the editor or picketing less still—yet even these are reported by significant percentages considering the level of activism required.

All told, the trend results in table 4.5, along with results from cross-sectional surveys (e.g., Environment Opinion Study, Inc., 1991), clearly indicate that most Americans have a positive view of the environmental movement and that large segments take at least modest actions on behalf of its goals. While caution needs to be used in assuming that answers to survey items like these translate into concrete behaviors, and the depth of commitment reflected by self-identification with environmentalism may be quite limited, the importance of these findings should not be downplayed. The environmental movement has been enormously successful in gaining the approval and participation of the American public, probably more so than any other contemporary social movement, and this is at least as important as the growing support for environmental protection policies documented in the prior tables. Such results provide a vital degree of legitimacy to environmentalists' claims of working on behalf of the society at large, while at the same time making it difficult for those who oppose them to make similar claims.

The Environmental Attitude Revolution

As early as 1970 commentators were calling the growing awareness of environmental problems an "attitude revolution" (Odum, 1970), and this perspective has become more common over the years. Nearly a decade ago, for example, Shabecoff (1985:2) wrote, "The burst of environmental activism that began in the late 1960s and sparked a series of landmark laws is likely to be recalled by future generations as a significant turning point in the history of the twentieth century. It was a revolution of sorts . . . [and] . . . it changed, probably forever, the way people look at the world." The growing strength of environmental concern and activism over the past decade has confirmed Shabecoff's view, and it is important to recognize that over the past quarter century our society (and much of the rest of the world) has undergone a "revolution" in the way it views the natural environment, especially the relationship between humans and nature.

Historically, Americans viewed natural resources as abundant and the prospects for growth and progress as virtually unlimited (Whisenhunt, 1974), but recent decades have brought about widespread questioning of these assumptions (Yankelovich and Lefkowitz, 1980). Besides recognizing the serious nature of environmental degradation (as already documented in this chapter), Americans have begun to give considerable credence to the ideas that natural resources are finite and that there are also limits to nature's ability to absorb the waste products of industrial societies. For example, a 1992 national Gallup survey found 87 percent agreeing that "[t]he balance of nature is very delicate and easily upset by human activities," and 80 percent agreeing that "[t]he earth is like a spaceship with only limited room and resources."[12] It is unlikely that these ecological beliefs would have been endorsed nearly as strongly two or three decades ago.

Similarly, whereas the natural environment has traditionally been valued by Americans primarily as a resource, something to be used in the production of goods, profit, and growth (Whisenhunt, 1974), it is increasingly recognized as valuable in its own right. In other words, more and more Americans seem to view a good environment as desirable, turning environmental quality into an important social value (Milbrath, 1984; Olsen et al., 1992). In the early days of environmentalism, it was frequently viewed as a "postmaterialist" value, one of several new quality-of-life values (along with freedom of speech, citizen participation, etc.) that arose during the period of extended abundance after World War II—a time when basic "materialist" values for standard of living (food, housing, jobs) were increasingly being satisfied (Inglehart, 1977). Over the past couple of decades, however, environmental quality seems to have become viewed more as a basic entitlement (Ladd, 1982). This is especially true now that environmental degradation is recognized as a major threat to human health and well-being; far from being a postmaterialist value, a healthy environment is now seen by many people as a basic component of one's standard of living.

Regardless of whether people value the natural environment primarily for its own sake (an "ecocentric" perspective), or mainly because they see a healthy environment as crucial to human welfare (a "homocentric" perspective), it seems clear that Americans have come to place far more value on environmental quality than before. This is apparent in the growing use of terms like "environmental ethics" and the "rights of nature."[13] While trend data to document this are not available, it seems highly unlikely that two or three decades ago 86 percent of Americans would agree that "[h]umans have a moral obligation to protect all living things," as was found in the 1992 Gallup survey cited above.

The growing belief in ecological limits and the increasing value placed on environmental quality are widely interpreted as constituting a change in our society's basic worldview or social paradigm (e.g., Dunlap and Van Liere, 1978; Milbrath, 1984; Olsen et al., 1992), for they challenge the way in which Americans have traditionally viewed their relationship to the natural environment. Most Americans certainly have not fully embraced this emerging ecological worldview, especially its lifestyle implications, nor clearly comprehended the contradictions between it and traditional values such as economic growth, free enterprise, and private property rights (see, for example, Van Liere and Dunlap, 1983). Yet, even partial endorsement of this new worldview represents a potentially momentous change from the past (see, for example, Milbrath, 1984; Olsen et al., 1992).

Acknowledging that the "environmental revolution" has in fact modified our society's basic beliefs and values helps account for the fact that public concern for environmental quality has proven to be an enduring concern. While public opinion is an indirect and imperfect function of underlying beliefs and values, the more that opinions are anchored in basic worldviews the less likely they are to prove transitory and ephemeral (Pierce et al., 1982: chap. 6). Recognizing that environmentalism has stimulated a change in our society's basic beliefs and values therefore helps make sense of the persistence of strong public support for environmental protection, even in the face of difficult economic conditions. Environmental quality has become an important value in our society.

Conclusion and Implications

Having already summarized the long-term trends in public opinion toward environmental issues, let me end by offering some general conclusions and drawing some implications from the results reviewed in this chapter. It is clear that the direction of public opinion is strongly proenvironmental, as large majorities express support for protecting the environment. Thus, it seems appropriate to conclude that environmental protection has become a highly consensual issue. Large majorities typically take proenvironmental positions on issues such as supporting government regulations and spending, and only small minorities endorse antienvironmental positions (often smaller than those taking the neutral position). This conclusion is bolstered by the fact that huge majorities of Americans belong to proenvironmental orbits, identifying themselves as environmentalists or as sympathetic toward the environmental movement and often engaging in various degrees of environmental activism. Indeed, very few policy issues achieve a level of consensus equal to that of current support for environmental protection.

On the other hand, the strength of public support for environmental protection is more difficult to assess. Not only can one question the depth of identification with environmentalism and the degree of actual lifestyle change accompanying such identification, but the extent to which pro-environmental opinions are translated into political impacts is unclear. In the first edition of this book, for example, I acknowledged the anomaly posed by Reagan's landslide reelection over Walter Mondale in 1984, despite the strong public disapproval of his environmental policies. Obviously Reagan's environmental agenda was not as important as other aspects of his presidency to voters. Likewise, some analysts pointed to the failure of several environmental ballot measures, such as California's "Big Green" initiative, in the 1990 election—only months after the twentieth Earth Day—as evidence that the publics' proenvironmental opinions are not held very intensely. Since the degree to which public opinion translates into actual behaviors such as voting is taken to be a good indicator of the strength of such opinion (Schuman and Presser, 1981: chap. 9), these electoral results raise questions about the strength of public support for environmental protection.

Judging the electoral impact of environmental issues has always been difficult, and political analysts have drawn conflicting conclusions (see, e.g., Anthony, 1982; Dunlap, 1987; 1991). Writing just before the 1990 congressional elections, for example, two influential political analysts agreed on the consensual nature of public support for environmental protection, but disagreed as to the electoral impact of this support. Celinda Lake of The Analysis Group, a major democratic polling and consulting firm, argued that "environmental issues play a critical role in determining the policy and candidate preferences of voters," while William Schneider, columnist for the *National Journal,* argued that "because the consensus is so broad, it is not likely to have much impact on politics" (both quoted in Dunlap, 1991:35).

A variety of evidence from the 1992 presidential election fails to clarify the ambiguity. For example, in a July 1992 national survey the Wirthlin Group asked voters, "How important are environmental issues when you are voting?" in various races, including the presidential election. A clear majority (57 percent) said "very important," and another 33 percent said "somewhat important," leaving only 10 percent indicating that environmental issues were unimportant in deciding their presidential vote. In contrast, a Harris national survey conducted during the same month found the environment volunteered by only 6 percent in response to the question "What two issues do you think will be of most importance to you in determining who you will support?" in the presidential election. And even more significantly, a nationwide exit poll of over fifteen thousand voters found environment ranking last among a list of nine issues mentioned by voters as having affected their voting decision. Only 6 percent chose environment, compared to 43 percent who chose economy and jobs, thus validating the Clinton campaign theme ("It's the economy, stupid").[14] Still, the fact that 6 percent mentioned environment as a key issue in their vote is itself significant (given that most elections are won by only a few percentage points), something that certainly would not have happened a decade or two ago.

In addition, it is obvious that Bush's desperate attempt to gain votes by portraying himself as more concerned about the economy than the environment (a complete turnabout from his 1988 promise to be the "environmental president"), and to paint Democratic vice presidential candidate Al Gore as an environmental extremist ("Ozone Man") based on statements made in *Earth in the Balance* (Gore, 1992), failed to help salvage a victory. Indeed, Bush even lost to Clinton in Washington State, where he came out strongly in favor of logging over spotted owls in an effort to carry the state. As election analyst Frederick Yang (1992:39) put it shortly before the election:

> Candidates such as President Bush make a tactical error when they address voter concerns about jobs by victimizing environmental protection. Few believe a healthy atmosphere is an amenity that can be purchased only at the cost of a healthy economy. And when it gets right down to it, if asked to choose between economic development and clean air and clean water, it is likely that the American public would vote "Green."

The error, according to Yang, stems from the fact that "environmentalism can almost be considered a 'valence' issue for the 1990s. . . . Voters today presume that candidates share their broad commitment to protecting the environment." When it becomes obvious that this is not the case, candidates are apt to lose more than they gain by emphasizing the economy over the environment.

In short, while there may not be a large "green bloc" of single-issue voters, comparable in commitment to the antiabortion or antigun control lobbies, the results presented in this chapter indicate that environmental protection has the support of a large majority of Americans. For this reason, very few candidates wish to be identified as "antienvironmental," especially at a time when environmentalists are increasing their efforts to publicize candidates' records and positions on environmental issues (League of Conservation Voters, 1992; Rifkin and Rifkin, 1992). Furthermore, it should be kept in mind that voting is only one of many political actions that people take. Individual environmentalists and environmental organizations such as the League of Conservation Voters often play crucial roles in political campaigns, either in support of proenvironmental candidates or in opposition to those with poor environmental records. Contributing money, distributing campaign literature, making phone calls, and so on, can be of immense value to a candidate, and if only a tiny fraction of the huge proenvironment majority of the public takes such actions it could make the difference in many elections.

Finally, it should be kept in mind that public support for environmental protection is crucial not only at election time, but when lobbying for new legislation or more effective implementation and enforcement of existing legislation. Thus, the true test of the strength of public concern for environmental quality lies not just in voting, but in signing petitions, writing and phoning public officials, attending meetings, testifying at hearings and so forth. Such political behaviors, along with providing support to environmental organizations (and their staffs of lobbyists, lawyers, and scientists), are all ways in which the American public can support environmental protection. The results reported in this chapter suggest that the public is amenable to providing such support; the key lies in how well the environmental movement and political leaders can mobilize it. At a minimum, the existence of broad public support in favor of environmental protection provides legitimacy for those working on behalf of this goal and a major obstacle to political candidates and others who suggest that protecting the environment is less important than stimulating the economy. This represents an enormous change from a quarter century ago.

Notes

1 Logically, one could also divide the small "antienvironmental" segment of the public into the active, attentive, and sympathetic orbits, although the "counterenvironmental movement" has never been sufficiently well organized to allow one to make these distinctions meaningfully (see, e.g., Albrecht, 1972, and Morrison, 1973, on the counterenvironmental movement). In addition, as will be noted later, by the nineties only a tiny fraction of the public identifies itself as opposed to environmentalism.

2 Perhaps the most egregious example is Lowe et al., 1980:441. These authors base their argument that environmental concern did *not* decline between 1970 and 1973 (when the NORC data they analyze became available) on the basis of "a review of several of the Gallup Opinion Indexes published during that period." However, as noted, the Gallup

MIP data peaked in 1970 with 10 percent and then gradually declined, standing at 4 percent in late 1972, before Gallup went to a *two*-MIP question format. Even with the latter format, environmental problems disappeared from the Gallup MIP lists in 1974. The only specific Gallup data Lowe et al. cite are two surveys of college students which included MIP-type questions. These surveys showed that environment declined from sixth in 1970 to eleventh in 1971 among college students, clearly contradicting their argument!

3 Further evidence that concern about energy adequacy did not have a direct impact on environmental concern is presented in Viladas, Co., 1974, and the Dunlap et al., 1979, panel study discussed above. Also, the percentages providing "neutral" responses or responding "Don't know" for this item and the subsequent items in table 4.3 are reported in Dunlap, 1987.

4 A review of the *Gallup Opinion Index* throughout the seventies reveals that environmental problems reappeared on the MIP list only once after 1973, with 4 percent in May 1977.

5 For example, two recent analyses of the state of public concern with environmental quality through the seventies came to differing conclusions in this regard, with Lake (1983:232) concluding that "it has defied the issue-attention cycle" and Anthony (1982:19) noting that, despite its continued strength, "there is also nothing . . . to suggest that Downs' analysis was basically wrong."

6 In 1984 two-thirds of the sample was given the old format, "improving and protecting the environment," and one-third was given the new format, "the environment," and NORC has continued to use this split-sample technique ever since. Because the results obtained with the two formats are reasonably close and do not vary systematically, tables 4.3 and 4.4 report results for the entire samples with the formats combined (Jones and Dunlap, 1992).

7 For more detail on public reaction to Reagan's environmental policies, see Mitchell, 1984b, and Dunlap, 1987.

8 The fact that the percentages volunteering environmental problems as one of the nation's most important problems was quite low throughout much of the eighties, when large majorities were nonetheless expressing strong concern about the state of the environment (as noted in table 4.4), reinforces my conclusion in the first edition of this book that volunteered MIP responses are too stringent a measure of salience.

9 For a compatible explanation grounded in social-psychological theory, see Heberlein's (1972) application of norm activation theory to environmental issues and the revisions and extensions of this theoretical model by Stern et al. (1987; 1993). Simply put, this model posits increases in environmental concern as a function of (1) increases in the awareness of the negative consequences of environmental problems for humans and (2) increases in the acceptance of personal responsibility for environmental protection. The latter variable, in turn, varies inversely with the assumption that others—such as the government—are responsible for environmental protection.

10 These results also indicate the limited base of support for the so-called wise use movement that champions the use, as opposed to protection, of natural resources. Despite claims of representing the general public, wise use organizations are typically little more than front groups for natural resource industries (see, for example, Deal, 1993).

11 For two differing views of the degree and significance of changes in personal behavior on behalf of environmental protection, see Roper Organization, 1990, and Cambridge Reports/Research International, 1992.

12 These are previously unreported results from a 1992 survey of 1,032 Americans. The items are taken from Dunlap and Van Liere's "New Environmental Paradigm Scale" (1978).

13 For excellent discussions of these issues see the journal, *Environmental Ethics.*

14 Results for the Wirthlin and Harris items were reported in *Polling Report* 1992:1. Results from the exit poll conducted by Voter Research and Surveys was reported in *Newsweek,* Nov. 12, 1992, p. 10.

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5

Interest Groups and Environmental Policy

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Since the 1960s environmental interest groups have become permanent features in the landscape of American politics. This mobilization of concern emerged from movements that reevaluated overall quality of life in modern industrial society. Specifically, environmentalists merged traditional wildlife and scenic resource preservation attitudes with the increasing concern over pollution and its impact on human health. In the ensuing four decades, environmental interest groups have become major forces in the political system, capable of altering the political agenda and winning significant victories against the usually dominant industrial and commercial interests of the United States.

Environmental organizations have experienced cycles of rapid growth followed by steady and sometimes even slightly declining support, as other issues replace environmental concerns at the forefront of the public agenda. Moreover, during this time period the environmental community has witnessed dramatic changes in the number and forms of groups involved. One of the primary successes of these organizations has been described in terms of "the institutionalization of environmental concern" (Langton, 1984:3). Evidence for this institutionalization is found in the passage of legislation and the professionalization of educational programs in environmental engineering, environmental economics, and environmental politics. It is also found in the creation of professional associations specializing in environmental matters, the creation of numerous public agencies dedicated to protection of the environment, and the proliferation and strengthening of environmental interest groups (Langton, 1984:5). Robert Gottlieb describes this institutionalization as an "environmental policy system" composed of legislative, administrative, and judicial policymakers, engineers, lawyers, environmental consultants, and mainstream environmental organizations. This system developed around the design, implementation, and revision of a dozen or so pieces of federal environmental legislation, such as the National Environmental Protection Act and the Clean Air and Water Acts, in the early 1970s (Gottlieb, 1993:124–26). Thus, environmentalism has grown from a cause to an accepted set of institutionalized American values.

The obvious social, political, and economic importance of environmentalism has spawned an enormous amount of research about public opinion and the environment, the effectiveness of environmental laws, and the growth and development of environmental interest groups. While in quantity the research is substantial, until very recently much of it has carried a tenor of advocacy, aimed to build up or tear down perceptions of public commitment, extol or criticize the effectiveness of environmental laws, or exaggerate or minimize the influence of environmental groups.

The present chapter focuses upon environmental interest groups and adopts a straightforward political science perspective. Our thesis is that environmental interest groups can best be understood with reference to pluralist thought that envisions group formation and membership as motivated by ideological appeals, concerns over public policy, and successful mobilization. Influencing policy is dependent upon effective leadership, the employment of appropriate strategies, and the forging of coalitions to alter the distribution of power within the political system. Given the diversity and number of environmental interest groups that have formed in recent years, the problems faced by a given group are determined by the political context within which that group operates. For instance, long-lived mainstream organizations are experiencing dilemmas to be expected of established groups that have reached their maturity, while local, direct action organizations must overcome daunting odds to effectively influence political decisions.

The evidence presented in this chapter sharply contradicts two other interpretations of environmental interest groups that take issue with the pluralist perspective. First, the ideological and policy appeal of environmental interest groups defies the rational actor thesis about the origin and persistence of interest groups. The most notable proponent of this approach, Mancur Olson, argued that groups are likely to form and to maintain themselves in direct proportion to their ability to offer selective benefits to their members (Olson, 1965). Otherwise they run into the free-rider problem: the lack of incentives for individuals to join large membership organizations that may provide benefits to all individuals regardless of formal affiliation. Further elaborating this rational actor thesis, Salisbury focuses on the issue of group formation. He sees the interest group leaders primarily as entrepreneurs concerned with ensuring group maintenance (and their own employment through staff positions) as opposed to impacting public policy outcomes (Salisbury, 1969).

A second approach that in our view inadequately explains the growth and behavior of environmental interest groups stems from a longing for political decision making that reflects a "holistic" understanding of the environment. Encouraged by the success of "green" movements and parties in Germany and other advanced industrial nations, analysts of this approach foresee the transformation of fragmented, narrow, particularistic lobbies into a broad-scale social movement that would change the nature of American politics (Paehlke, 1989; Gottlieb and FitzSimmons, 1986). We find quite the opposite, that the relationships among environmental interest groups have failed to coalesce into a unified environmental movement or, perhaps, environmentalism has devolved from such a movement in that it "is no longer a single, identifiable entity" (Bosso, 1993:46). Rather than comprising a tightly knit environmental movement, the term "environmental community" better describes the diverse collection of interest groups loosely connected to one another by virtue of their concern for some aspect of environmental protection. The well-documented weakening of political parties in the United States further precludes the development of a strong and cohesive green force in American politics. Whatever the public policy and social merits of such a movement, we judge it more likely that environmental decision making will continue to be characterized as piecemeal, incremental, and halting, and that enacted policies will only approximate desired environmental solutions.

Evolution of Environmental Interest Groups

The substantial increase in the number of environmental organizations attests to the dominance of interest group pluralism as an explanatory framework. This growth of environmental organizations mirrors the near explosion of public interest groups in Washington described by Petracca (1992). Of this vast increase in the number of interest groups during the past three decades a substantial proportion are membership organizations, precisely the kind of organizations Olson suggested would be difficult to form and to maintain. In addition to these more-or-less mainstream Washington-based organizations, literally thousands of environmental group have emerged at the local level. Moreover, the dedicated leadership of individuals, such as

Lois Gibbs of the Citizens' Clearinghouse for Hazardous Waste (CCHW) suggests that Salisbury's conclusions regarding group leadership fail to hold for grassroots environmental organizations. In Gibbs's case, her motivations were those of a housewife concerned for the safety of her family and Love Canal community.

Exploring a variety of explanations for the increase in the number of groups, including the growth of government programs and improved methods of communication and fund-raising, Walker (1983) argued that the principal explanation was support by external funding agencies. These agencies provided a substantial part—often as much as half—of the funding of many membership organizations. Hansen (1985) identifies environmental groups as particular beneficiaries of the patronage of external funding sources, both private and public. The Ford Foundation, for instance, was instrumental to the growth and sustenance of the Environmental Defense Fund (EDF) and the Natural Resources Defense Council (NRDC). In addition, specific environmental threats or events have also spurred the formation of several environmental organizations. For example, Environmental Action was formed in connection with the first Earth Day in 1970, EDF evolved from a local organization worried about DDT threats, and CCHW, as well as numerous local groups, were created in response to crises at Love Canal and other toxic sites.

Organizations concerned with protection of the environment have played important roles in American politics at least since the foundation of the Sierra Club in 1892. (For an excellent discussion of the histories of the major environmental groups, see Mitchell, 1985). The founding of the National Audubon Society (in 1905) and the National Parks and Conservation Association (in 1919) saw two more groups join a growing conservation constituency. These organizations constituted the core of the "first wave" of groups concerned about conservation of natural resources, with particular emphasis on land resources, protection of specific sites against despoliation, and the preservation of wildlife species. Ensuing decades witnessed the formation of two additional important organizations, the Izaak Walton League in 1922 and the National Wildlife Federation in 1935. While organized in a variety of ways and having different policy concerns and geographic concentrations of membership, all of these were strong membership organizations that relied on member support and involvement for their survival. Not only have they survived but these mainstream groups remain influential participants in the environmental community.

A second generation of environmental groups entered the scene during the period of the 1960s and 1970s as public attention shifted from preservation issues to problems associated with environmental pollution. Inspired by the writings of scientific thinkers such as Rachel Carson, Barry Commoner, and Paul Ehrlich, the vision of environmentalism expanded to an ecological approach to the natural environment. This vision recognizes the complex interrelationships of living things, uses science as a tool for understanding and protecting the environment, promotes an awareness of the cumulative and potentially disastrous impact of imprudent use of resources on all forms of life, and raises awareness of the dangers of human overpopulation. In terms of organized group life, this new orientation brought forth new associations. The first was the EDF in 1967, followed by the NRDC in 1970. Both used litigation as the instrument of choice for reform and both eventually ended up being membership organizations with their own topical emphases: EDF on toxics, water quality, and power generation; NRDC on air pollution, nuclear power, and solid waste. Greenpeace International, Friends of the Earth (FOE), and Environmental Action were also organized during this period. In contrast to older conservation groups and science-friendly groups such as EDF and NRDC, these groups emphasize direct action and radical opposition to the existing system and to technological developments. Still another set of groups sprang from other organizations. In the mid-1970s, the Environmental Policy Institute (EPI) arose from a schism in FOE, which itself was a split from the Sierra Club. Greenpeace, FOE, and Environmental Action joined the ranks of the membership organizations while EPI is an organization dependent on funding from a limited number of patrons. Greenpeace International, in particular, has experienced remarkable growth—it currently boasts the largest membership of any environmental organization. The second generation of environmental groups fit into an altered political context to which first generation groups were forced to adapt. Traditional conservation groups gave pollution abatement greater attention.

The expansion of grassroots groups has been described as environmentalism's "third wave" (Bosso, 1992). The defining characteristic of grassroots groups is their bottom-up, decentralized nature, as opposed to the centralized administration of the large mainstream membership groups. Grassroots groups tend to be, but are not always, local or regional in focus; for example, there exist some national grassroots groups and group networks, such as CCHW, a network of local antitoxics alliances. In addition, there are national groups that cannot be easily classified as either grassroots or mainstream, such as Sea Shepherd, Earth First!, and many small, though not necessarily radical, organizations. Just as there is great diversity in the overall population of environmental interest organizations, community and grassroots groups are a varied lot, including legal centers, expertise-based organizations, associations focused upon traditional natural resource or recreation issues, and antitoxic, environmental equity, and other public-health-oriented groups. While grassroots groups are diverse in their issue orientations, degree of professionalization, size, and budgets, they share the hope of democratizing the policy process by shifting the focus of environmental policy to the local level. As Goldsteen and Schorr (1991) stress, these grassroots groups represent a "new paradigm" in which communities no longer passively accept the assurances of outsiders, but demand a voice in decisions that impact their environment. In addition, many grassroots groups are hostile or ambivalent toward mainstream groups, regarding them as partially responsible for environmental problems, because of their involvement in the environmental policy system. Richard Moore, co-chair of a grassroots organization, the Southwest Network for Environmental and Economic Justice, reflects this view: "The Sierra Club has been responsible, has been a co-conspirator in attempting to take away resources from our communities. Like we said in our letter [from the Southwest Organizing Project to the "Group of Ten" environmental organizations]: your organizations are supporting policies that emphasize the cleanup and preservation of the environment on the backs of working people, and people of color in particular" (Sierra Club, 1993a:58).

The exact number of grassroots groups at any time is unknown and is constantly changing, as many are single-issue groups that form and dissolve in response to specific issues or events. Identification and documentation are further hampered by the inability of many of these groups to publicize themselves, because of budgetary and other constraints. As an indication of the number of grassroots groups, CCHW, a network of antitoxics groups, reportedly interacts with over seven thousand local groups nationwide (Gibbs, 1989, cited in Freudenberg and Steinsapir, 1992) and a preliminary search of grassroots organizations concerned with the environment of the U.S.-Mexico border region identified well over two hundred such organizations on either side of the border. In terms of issue orientation, grassroots groups run the gamut of environmental concerns: for instance, groups like Oregon Natural Resources Council and Save Our Community are concerned with traditional natural resources policy issues (i.e., logging and wetlands respectively), and numerous groups address toxic pollution, such as South Tucsonans for a Clean Environment, which formed in response to trichloroethylene (TCE)-contaminated wells. The issue focus of grassroots groups is probably as varied as the environmental concerns facing localities throughout the nation. A growing trend among grassroots organizations is the promotion of what has recently been termed "environmental equity" or "environmental justice." Closely aligned with the other strains of grassroots activism (e.g., civil rights and church-based community organizations), environmental justice advocates seek to redress the policies that have forced poor and/or minority communities to bear what are viewed as disproportionate environmental burdens. Like many grassroots groups, environmental equity groups tend to be most concerned with the public health aspects of environmental degradation (Bullard, 1993).

While external funding unquestionably facilitated the creation of environmental organizations in the 1970s, the availability of outside funds can explain neither the persistence of mainstream environmental organizations into the mid-1990s, nor the development and maintenance of extremist national and international environmental groups, nor the dramatic rise in grassroots activism. Those organizations that began with the support of a financial patron now have developed other sources of income, relying particularly on membership dues to provide a major proportion of their budgeting needs. In addition, mainstream environmental groups receive a large amount of funding from wealthy patrons: individuals who donate over $25,000 and hold over $1 million in liquid assets. Also belying rational actor predictions, only 16 percent of these donors can be classified as investors, those individuals who give "with one eye on the cause and one eye on tax and estate benefits." More likely patrons include individuals who give based on a family history of charitable contributions, those motivated by a desire to improve the community, or socialites who "throw functions for charity and have a good time doing it," each comprising 20 to 25 percent of environmental group patrons (Prince et al., 1994, cited in the *Chronicle of Philanthropy,* 1994).

Evidence from survey research suggests strongly that two elements are crucial in maintaining membership in environmental organizations: the perceived existence of threats either to one's own environment or to the general environment of the nation and the appeal of an ideology that corresponds with the concerns of the individuals to whom appeals for membership are made. Selective benefits, available only to members, such as opportunities to acquire coffee-table books, participate in sponsored outings, and obtain credit cards, provide substantial income to an organization like the Sierra Club, but they do not account for the growth and maintenance of membership strength.

The pattern of *growth of membership* in some environmental groups would seem to closely parallel perceived threats to the environment. For instance, growth in the Sierra Club relates to political cycles. In the 1960s the Sierra

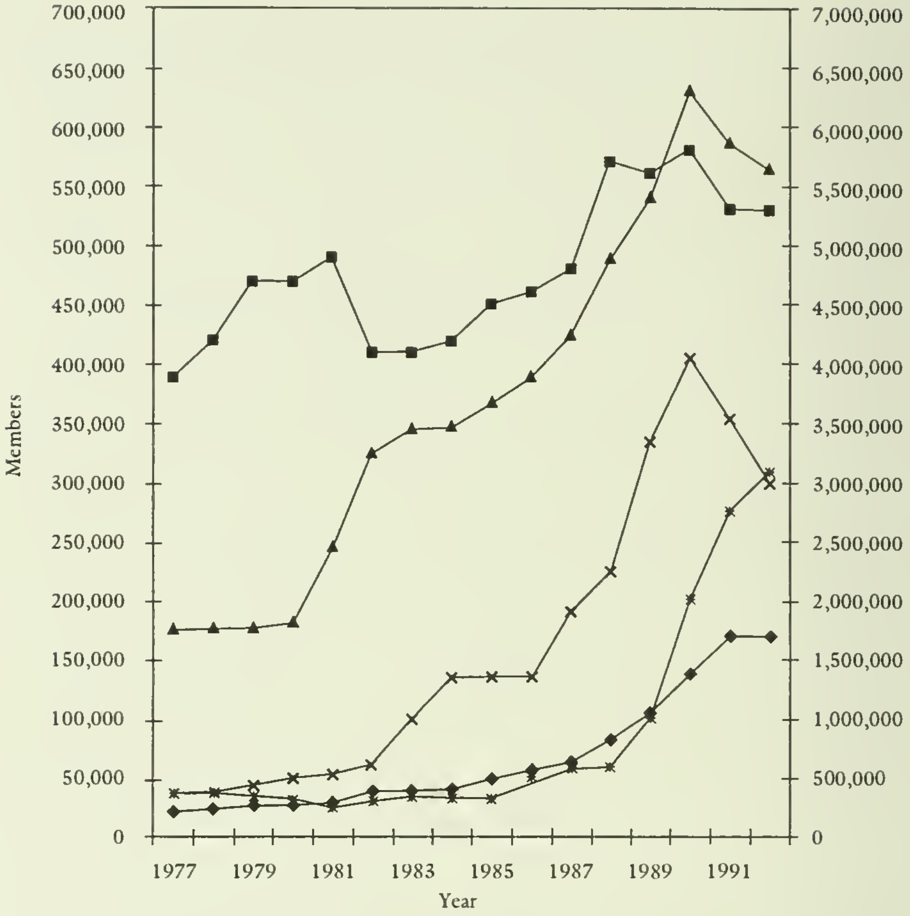

Figure 5.1 Environmental Organization Membership. Note: The right scale applies only to the National Wildlife Federation, all other groups are scaled on the left. A separate scale is necessary as NWF employs unique membership criteria. ▲ Sierra Club, × Wilderness Society, ✱ National Parks and Conservation Association, ◆ Natural Resources Defense Council, ■ National Wildlife Federation.

Club was a small California-based group with 35,000 members. A spurt of growth occurred in the 1970s, slowing toward the end of the decade (see figure 5.1). Only incremental growth took place during the Carter years, when an environment-friendly administration posed little threat. By 1980, the Sierra Club had a membership of 180,000. Another great spurt of new members occurred early in the Reagan administration when individuals holding openly antienvironment views headed the Interior Department (James Watt) and Environmental Protection Agency (Anne Gorsuch). By the beginning of 1983 Sierra Club membership climbed to 346,000. Membership in the National Audubon Society (not shown in figure 5.1) was up 70 percent in the same period. It should be noted that these membership gains abated, but did not entirely end, after less controversial figures replaced Watt and Gorsuch at top administrative posts.

In the late 1980s, environmental concern was aroused again, in this instance by worries about global environmental deterioration as manifested by disastrous accidents (such as those occurring at Bopal, Chernobyl, and Valdez), declining biodiversity, ozone depletion, and climate change. Environmental organizations experienced an enormous corresponding growth spurt. By 1990, for example, Sierra Club membership reached 629,000. This figure represents a membership increase of more than threefold since 1980 and over 200,000 members in the period between 1987 and 1990 (48 percent growth). However, since the Earth Day's twentieth anniversary celebration in 1990 most groups have faced not just a slowdown in membership growth but an absolute membership decrease. It appears that environmental threats paled in relation to other issues such as the Persian Gulf War in 1991 and jobs and the economy during the recession of the early 1990s. Clinton's inauguration in 1993—signaling the end of twelve years of presidential leadership typically not supportive of environmental causes—may result in further declines, similar to those precipitated by the Watt and Gorsuch retirements. Just as certain groups more effectively capitalized from perceived threats to the environment than other groups (as shown in figure 5.1), it is probable that some organizations will suffer a greater share than others of the burdens associated with declining emphasis directed toward environmental issues and the absence of an antienvironmental advocate ranking high in the presidential administration.

Turning to an analysis of the kinds of people who join mainstream environmental groups, there is little to suggest the emergence of a broad, revolutionary movement distinct from the mainstream of society. The people who join environmental groups differ most strongly from the public as a whole in the extent of higher education received. It is noteworthy that they are not especially distinguishable from the general population in terms of income or occupational prestige. Members may be an elite of a compositional sort, but mostly in the sense that most political activists reflect higher socioeconomic status (Morrison and Dunlap, 1986). The rise of the environmental justice movement has forced the mainstream groups to attempt to broaden their membership bases. Recently the Sierra Club has made strides to publicize its environmental justice efforts through its publications, such as *Sierra* (Sierra Club, 1993a) and *Membergram* (Sierra Club, 1993b). Carl Pope, Sierra Club executive director, envisions that by the turn of the century the Sierra Club can reflect the ethnic diversity of the United States (*Sierra,* 1993). Likewise, NRDC has begun an environmental justice program that overlaps its programs on urban environment and public health, two of its seven principal areas.

Members of grassroots groups may well be very different from their national counterparts, although noted earlier there is a dearth of systematic data pertaining to grassroots organizations. Often, grassroots groups are community-based and take on the character of their locality. In upper-middle- and upper-class communities it is likely these groups will closely resemble the national membership environmental organizations. In poorer communities, where many grassroots groups are spawned, especially antitoxic and environmental equity organizations, membership most likely diverges from the mainstream groups in terms of economic status, level of education, and racial/ethnic composition. In addition, grassroots organizations are markedly different from mainstream groups in the role played by women. As Gottlieb (1993) notes, one of the defining elements of the antitoxics movement is the central role played by women, including working-class women. The nontraditional membership is strikingly evident in the Mothers of East Los Angeles, an organization formed by Mexican American women to block the siting of an oil pipeline in their commuinity (Freudenberg and Steinsapir, 1992). The increase of grassroots activism and concern over the public health impacts of environmental hazards has mobilized constituencies that remained mostly unaffected by mainstream environmental groups.

Environmental interest groups, at least the largest and best-known among them, tend to be membership rather than nonmembership groups. Some groups, like EDF and NRDC, were originally tightly held and led organizations, consisting principally of the officers supported by foundation contributions. Subsequently, they developed sizable memberships, in each case around 200,000 in 1993. While many local groups have some sort of formal membership, most are not membership groups in the sense of the national groups that are dependent upon dues for financial support. Instead, these groups often collect small or nominal dues to cover only the printing and publication of a newsletter, such as the one dollar annual dues of the conservation-oriented Friends of Upper Newport Bay in Southern California. Other grassroots groups, such as Arizona's influential Border Ecology Project, tend to eschew membership and the burdens of its administration, preferring to concentrate on environmental and ecological analysis and the design of environmentally and socially sensitive public policy. Alone among major environmental groups with no membership is the Environmental Policy Institute. In contrast, the Sierra Club has all along been fundamentally a democratic organization with regular elections and occasionally real contests over leadership positions. This distinction presumably makes a significant difference in the extent to which organizations are free to take or not to take stands on controversial issues or devote attention to issues that may be of marginal interest to factions within the organization. As a decentralized, quasi-grassroots, organization with multiple interests and ample participation by individual members, the Sierra Club has been described as "a sort of flight of bumble bees flying along stinging everything it runs into" (Stanfield, 1985:1351).

As already indicated, private interests, such as foundations, have been crucial to the founding and maintenance of environmental as well as other citizen interest groups. Government has also been a principal agent in fostering interest group activity. Much of the environmental legislation passed in the 1970s (for example, the National Environmental Policy Act, Clean Air Act, and Toxic Substances Control Act) is particularly important in generating interest group formation and maintenance. These statutes require public involvement of interest groups through public notice, hearings, the creation of advisory groups, the holding of workshops, and in some instances the direct funding of interest groups that were incapable of sustaining the prolonged activity that attention to environmental matters required (see Daneke et al., 1983; Lester and Bowman, 1983; O'Hare et al., 1983). Funding for such activities was drastically reduced by the Reagan administration and inadequately compensated for by support at the state level so that the extent to which environmental groups could depend upon government as an aid to group maintenance was problematic (Lester and Bowman, 1983:184–93). The Clinton administration has sought to reinvigorate the discursive interaction between environmental interest groups and policymakers through efforts such as the summit in the Pacific Northwest regarding long-term management of the old-growth forests and the creation of a Border Environment Cooperation Commission as part of the North American Free Trade Agreement side accords (Clinton, 1994). However, in an era of budget deficits and fiscal constraint, government funding for interest group activity remains problematic and uncertain.

Goals and Strategies of Environmental Groups

As we have shown, there is extreme diversity among environmental interest groups. This variety extends to the goals and values different organizations seek to maximize. Some groups concentrate on specific environmental problems such as air quality, wilderness protection, or toxic clean-up, while others involve themselves in a range of issues. It would hardly be surprising, then, to find that there are differences in the strategies and tactics pursued by the various groups as they adapt to their individual group strengths and weaknesses and perceive their role within the environmental community.

In general, the strategies of most environmental groups can best be understood as attempts to gain access to governmental decision making. However, a few groups choose to act directly rather than rely on government. The Nature Conservancy (TNC) and Earth First! both diverge from the mainstream in selecting strategies to protect habitat and wilderness. At one extreme, Earth First!, is organized around the principle of deep ecology, a concept stressing the interrelatedness of natural objects and that confers rights to nonhuman natural objects equal to humans. Earth First! practices "ecotage" (the sabotage of ecologically damaging enterprises, at the same time striving not to harm human lives) carried out by its members (Devall, 1992:56–57). Further, Earth First! uses humor, often with an irreverent twist, as in the mock "cracking" of Glen Canyon Dam, to appeal to public sensibilities. At the other tactical extreme TNC also seeking to preserve biodiversity by eliminating development threats, engages in efforts to obtain and hold in perpetuity, through purchase and/or easement, ecologically valuable land parcels. Donors are asked to contribute money and/or land. Neither organization is particularly interested in lobbying decisionmakers. Similarly environmental justice advocates are appealing directly to public conscience and values as much as (or more than) securing access to legislators and administrators or indirectly affecting government through changing public opinion and constituency demands.

In contrast, most mainstream organizations and many smaller groups, such as the Western Ancient Forests Campaign, engage in standard American political practices of lobbying, electioneering, litigation, coalition building, and public mobilization. Their success in utilizing these tactics depends on the resonance of their appeals to the target audience, the image and standing of the organization in the public's mind, the nature of the times, and the specific threats that are being posed.

Two of the distinguishing characteristics among environmental groups is their orientation toward science versus activism and their willingness to engage in negotiations with those whom they consider to be the adversary. Groups such as the NRDC and the EDF embrace science and seek to demonstrate expertise through technical mastery of the logic of their positions on toxic substances and air quality. Other environmentalist organizations tend to eschew science and believe their principal role is that of advocacy and publicity. The Sierra Club provided landmark examples of advocacy with spectacular public relations campaigns that blocked dams in Dinosaur National Monument in 1956 and Grand Canyon National Park in 1968. These early campaigns depended mainly on emotional appeals and to a lesser extent on expert testimony about hydrology, sedimentation, power generation, and the like. Currently, local environmental organizations go further to reject scientific and technical reasoning altogether. Antitoxic groups, for example, believe the heavy reliance on scientific standards and "rational" policy making obscures the issue of public health impacts that stem from poisoned soil, water, air, and workplace conditions. Further, many grassroots groups feel that their minuscule budgets and lack of professionally trained personnel preclude them from participating in the policy process when decision making hinges on scientific grounds. Lois Gibbs, an extreme critic of mainstream groups and self-proclaimed "antienvironmentalist," offers a description of a meeting between grassroots activists and representatives of the "Group of Ten" mainstream environmental groups that highlights several differences between the types of groups, including the reliance on science and the willingness to compromise:

> It was hilarious. People from the grassroots were at one end of the room, drinking Budweiser and smoking, while the environmentalists were at the other end of the room eating yogurt. We wanted to talk about victim compensation. They wanted to talk about ten parts per billion benzene and scientific uncertainty. A couple of times, it was almost war.
>
> We were hoping that, by seeing these local folks, the people from the Big Ten would be more apt to support the grassroots position, but it didn't work that way. They went right on with the status quo position. The Big Ten approach is to ask: What can we support to achieve a legislative victory? Our approach is to ask: What is morally correct? We can't support something in order to win if we think it is morally wrong. (Greider, 1992:214)

Gibbs' hostility toward mainstream environmentalists is probably extreme among grassroots advocates. Nevertheless, her attitudes highlight basic tensions regarding the use of technical scientific information, and the willingness and timing of compromise, which trouble relationships between environmentalists.

Whether and when to cooperate with adversaries is a particularly divisive issue among environmental groups. Reflecting an attitude similar to that expressed by Gibbs, members of the Student Environmental Action Coalition (SEAC) see negotiation and compromise as both futile and morally reprehensible in their efforts to halt the construction of an astronomy observatory complex on Southern Arizona's Mount Graham. The telescope construction and associated development threaten the endangered Mount Graham Red Squirrel with possible extinction. Untrusting of their adversary, SEAC members perceive their opponents as powerful institutions bent on either destruction or cooptation of the group. In addition, even if relations between SEAC and development interests were less hostile, there is little room for compromise as the environmentalists view an outcome of anything outside of complete preservation of the Mount Graham habitat as failure. On the other hand, the Environmental Defense Fund has maintained a constant record of negotiating "deals" with the perpetrators of environmental harms to achieve workable solutions. EDF worked with the staffs of the California Public Utilities Commission and the Pacific Gas and Electric Company to arrive at conservation solutions to the utility's problems in meeting future demands for energy, thus avoiding the construction of several nuclear power plants that were on the utilities agenda (Roe, 1984). Similarly, EDF has developed working arrangements with the Westlands Water District in central California to resolve the problems associated with high levels of selenium in the Kesterson Wildlife Refuge.

Influencing Policy

Beginning in the 1970s traditional conservation groups and the newly formed environmental organizations became increasingly involved in public policy. According to Michael McCloskey, a former executive director of the Sierra Club, the transformation was deliberate. "What I have emphasized has been a serious approach toward achieving our ends. I thought that we were not here just to bear witness or to pledge allegiance to the faith, but in fact we were here to bring that faith into reality. . . . That means we could not rest content with having said the right things, or with having made our convictions known, but we also had to plan to achieve them. We had to know how the political system worked, how to identify the decision makers and how their minds worked. We had to have people concerned with all the practical details of getting our programs accomplished" (Gendlin, 1982:41). Likewise Russell W. Peterson, president of the National Audubon Society from 1979 to 1985, reminisced: "My most important contribution within Audubon was to make it more of an activist group" (Esch, 1985:D-12).

The Carter administration initiated a period during which environmental groups not only were increasingly political but also became comfortable with inside access to the executive and legislative branches. The appointment of a number of environmentalists in the Environmental Protection Agency, the Department of Interior, and the Justice Department provided groups with built-in access. According to Brock Evans, former director of the Sierra Club's Washington office, "[S]ome of the fiercest attacks on Carter have been mounted by the oil, timber, and mining industries because the President appointed so many environmentalists to key policy posts—something that had never happened before" (Evans, 1980:22). Environmentalists behaved as might be expected toward friends. One commented, "Before, we filed lawsuits and held press conferences. Now we have lunch with the assistant secretary to discuss a program" (quoted in Mosher, 1980:212).

This period of inside access afforded by the Carter administration ended with Reagan's inauguration in 1981. As noted above, the Reagan administration, particularly in the early years, was hostile to environmental programs. Environmental groups shifted to more confrontational strategies during the Reagan administration due to the loss of insider access. According to McCloskey, the Sierra Club moved toward direct action tactics for influencing policy, such as picketing government officials and organizing petition drives, because of the perceived futility of lobbying the Reagan administration (Gendlin, 1982:38).

Even after Bush's appointment of William Reilly—from the Conservation Foundation—to head the Environmental Protection Agency (EPA), environmentalists still felt excluded from access to decision-makers. Contributing to this feeling of isolation was the fact that much of the influential rule making and implementation of decisions affecting environmental legislation took place outside public scrutiny in the Office of Management and Budget and in the Presidential Council on Competitiveness (Greider, 1992:141–48). The experience of wetlands is illustrative of the environmentalists' frustration. Controversy surrounded the development of a uniform definition of wetlands for use by all federal natural resources management agencies. In January 1989 the four primary agencies involved in wetlands preservation and management, the Army Corps of Engineers, EPA, the Fish and Wildlife Service, and the Soil Conservation Service, adopted common delineation criteria. Much to the displeasure of mainstream environmental groups, the Competitiveness Council intervened and substantially restricted the agencies' definition of wetlands, thus making many previously protected areas open to development. Environmentalists charged that not only had Reilly lost control over environmental decisions to antienvironmental forces within the administration, but also that the council's criteria were "devised by developers, timber companies, and highway departments" (Pope, 1991). In the end neither definition was adopted, as agencies reverted back to their original, nonuniform, criteria for wetlands delineation.

The Clinton administration, under the stewardship of avowed environmentalists such as Vice President Al Gore and Secretary of the Interior Bruce Babbitt, changed access once again. To illustrate the improved built-in access of environmental groups, the success of the NRDC in garnering administration appointments is instructive. Former NRDC staff members are now serving in the Energy Department, National Security Council, EPA, and the Agency for International Development (Martel et al., 1994). This new insider status carries constraints as well as opportunities. G. Jon Roush, the new president of the Wilderness Society, expressed the difficulty of the new situation: "Most people believe that this is a pro-environmental Administration, but there are times when we've been severely disappointed. It's a much more ambiguous situation for us. If we oppose them, we come out sounding a little bit radical and crazy" (Kriz, 1994:132).

This increased access to the White House has not entirely appeased the environmental community, as Secretary Babbitt's early experience indicates. Upon entering the administration, Babbitt was hailed as an environmental crusader. However, as his tenure progressed, opinion from the environmental community became more mixed. Early on, environmental groups objected loudly when the White House considered moving Bruce Babbitt to fill a Supreme Court vacancy, arguing that he was indispensable at the Interior Department. However, as Babbitt's term advanced, groups also found flaws. Secretary Babbitt received harsh criticism for a perceived overwillingness to compromise. His proposals to reform grazing laws in the West caused discomfort of mainstream and grassroots environmentalists, as well as ranchers. Babbitt's initial proposals, in the fall of 1993, to increase grazing fees on Western public lands drew heavy resistance from ranching interests and several Western senators and governors. The result was a restructured grazing reform with a substantially smaller fee increase and greater local control. During the process of designing a new grazing reform measure, conflicts arose between Bureau of Land Management Director Jim Baca and Babbitt. Baca, an environmental group favorite, was forced to resign over what was seen as an abrasive management style and unwillingness to work with Western elected officials (Van Der Werf, 1994). Both Baca's resignation and Babbitt's embrace of a less stringent grazing proposal favorable to ranchers and other entrenched local interests troubled environmentalists. In response to the Baca controversy, Wilderness Society Rocky Mountain Office Director Darrell Knuffke lamented, "If you boil it down, he [Baca] is too much of an environmentalist for the administration" (Kenworthy, 1994:A1). With regard to grazing, both grassroots and mainstream "environmentalists hate it that Babbitt would 'water down' his reform program" (Muro, 1994). As Babbitt's relationship with environmentalists cooled, one newspaper commentator speculated with amusement that the national environmental groups were printing and distributing bumper stickers stating "Babbitt for the Supreme Court" (Kamen, 1994:A21).

Local groups are far less concerned than are mainstream organizations with building access to national officials. Local groups seek community solutions to community problems. While they often work with federal administrators such as EPA officials on Superfund sites, their primary interest is change at the local level. In the eyes of most grassroots activists, access to city, county, and state legislators and administrators supersedes that of the federal government. For example, South Tucsonans for a Clean Environment is at least as occupied with the Tucson Water Department as with the federal EPA in the fight to prevent delivery and ensure clean-up of TCE-laden water. Further, in contrast to many mainstream, grassroots groups seldom perceive their relationship—at all levels of government, including Washington—as a partner in policy making. Rather, grassroots groups are likely to cast themselves as watchdogs removed from the policy process. Grassroots activists such as Penny Newman of Concerned Neighbors for Action, a California organization, must become technically aware to block government and industry proposals they view as unacceptable, yet they are rarely taken seriously when advancing policy prescriptions of their own (Gottlieb, 1993).

Coalition Building

Beginning in 1980 leaders from ten mainstream environmental groups began to meet regularly to plot strategy and determine priorities.[1] Before then, cooperation was more ad hoc. Brought together both by a sense of urgency over Reagan's election and through the encouragement of several foundation leaders, the Group of Ten members sought to mimic the "Business Roundtable" which allowed business leaders to speak with a more coherent and unified voice. By the time regular meetings were discontinued at the end of the 1980s, the Group of Ten had accomplished its initial goal of regularizing cooperation between the mainstream groups.

The association's primary accomplishments were the development of common strategies that included attacks on Reagan appointees and the establishment of a dialogue with corporate interests (Gottlieb, 1993:117–24).

The membership of the Group of Ten was diverse and the organizations differed from each other and from local and grassroots groups. Among the ten were more conservative outdoorpersons' organizations, such as the NWF and the Izaak Walton League, expertise-centered organizations like EDF, and also the more adversarial, decentralized membership groups, most notably the Sierra Club. In light of these differences it is not surprising that one or another of the groups parted company from the others from time to time. Nonetheless, a spirit of cooperation developed through the interaction between these groups has become institutionalized and groups conserve their resources by allowing one among them to take the policy lead in areas of particular expertise while others follow.

Drawing on past experiences with coalition formation, in 1994 a diverse, though predominantly mainstream, coalition of fifteen groups formed to mobilize public pressure against efforts to weaken environmental laws, such as the Clean Water Act, Superfund, and the Endangered Species Act. While it is too early to determine the staying power and influence of this coalition it is noteworthy that none of these laws was altered during the 103rd Congress, which ended prior to the 1994 congressional elections. However, the fact that these major environmental statutes were neither strengthened nor weakened, despite calls for reform, probably resulted more from gridlock characteristic of this Congress than environmental interest group activity and public mobilization.

No similar propensity to collaborate links mainstream and local groups, formal affiliations not withstanding. Mainstream groups and grassroots groups are often divided on policy and cannot form coalitions. Local and grassroots groups fear that national groups will bargain away their collective interest. The characteristic willingness to compromise by the mainstream groups compared to the general steadfastness of local groups has made coalition formation and maintenance problematic. Recently, several national groups have attempted to reduce differences. Recognizing the isolation of the many mainstream groups from the local level, in 1993 the Wilderness Society selected as its new president, G. Jon Roush, who is committed to forging new relationships with grassroots organizations (Kriz, 1994).

Despite their great variety and far-flung geographic locations, local and grassroots groups display surprising cohesion and ability to form coalitions. This is partly due to the shared feelings these groups experience as outsiders, fighting for moral causes. Further, groups desire to share information and to garner lessons from each other so that each organization does not have to start from scratch when mobilized against specific instances of toxic pollution, land use decisions, or environmental inequity. For example, two grassroots networks (i.e., the CCHW and the National Toxics Campaign) started as efforts to bond together citizens' environmental groups, share information, and create a sense of solidarity. As a condition of support, CCHW requires that any group receiving its aid pledge to share information and resources with other grassroots antitoxics organizations. In addition, information-sharing through environmental bulletin boards on the internet may enhance the ability of local groups to communicate with one another.

If coalitions among environmental organizations are difficult to form, alliances between environmental and nonenvironmental groups are even harder to establish and maintain. Policy goals are often portrayed as zero-sum trade-offs between environmental protection on one side and jobs and economic growth on the other, thus alienating the environmental community from labor and industry. However, there exist some factors that may lead to coalition formation and maintenance among environmentalists and other political actors. Zeckhauser describes several strategies to provide incentives to both parties in these coalitions: (1) linking the proposals imposing costs with other legislation that provides benefits to the constituencies that might be harmed, (2) phasing the implementation of programs so that effects are delayed, and (3) purposely introducing uncertainty that makes it difficult for the organized interest groups to determine whether their constituents will be more likely to incur costs than benefits (Zeckhauser, 1981).

The record of industry-environmental cooperation is well established and other ties are developing. Environmentalists supported the Clean Water Act in 1972 in alliance with the major urban interests that wanted money for construction of municipal waste treatment plants (Mann, 1975). Since then the National Wildlife Federation has established a Corporate Conservation Council to encourage communication between environmentalists and business (Hassler and O'Conner, 1986). Environmentalists also are working with agriculturists to facilitate research by the EPA on pesticides (Stanfield 1985:1352). Similar cooperation with industry is possible in research and development for toxic waste disposal. Environmental groups are on record as cooperating with fiscal conservatives to defeat costly and unnecessary water development projects. There are important opportunities for cooperation with farmers with respect to soil erosion. In the NAFTA debate, the Sierra Club and Friends of the Earth, anti-NAFTA groups, allied themselves with labor, while other mainstream forces, led by EDF, NRDC, and NWF, joined with the pro-NAFTA business lobby in securing certain environmental safeguards in the NAFTA's side accords. The Nature Conservancy is especially successful at working with corporate patrons, increasing its resources for habitat purchase. TNC also works in concert with government agencies, purchasing desired lands much more easily than can government agencies because TNC does not have to work through the legislative process. Often the plan from the beginning is to turn over purchased land to government for management (Martel et al., 1994). Finally, grassroots activists have been particularly adept at forming coalitions outside of traditional environmentalism. Environmental equity groups established important linkages with public health, civil rights, and social justice advocates (Bullard and Wright, 1992).

Participation in Elections

Participation in the electoral process, including the endorsement of candidates, by most environmental groups is best interpreted as an attempt to obtain access rather than to establish a separate "green party." Electoral activity by environmental groups evolved slowly and haltingly, beginning with candidate ratings on the basis of legislative votes and positions. Often these ratings were presented as informational without endorsements. In 1970 a newborn environmental lobby group, Environmental Action, mated two concepts, the group rating and the "wanted" poster, to create an environmental hit-list christened the "dirty dozen." Environmental Action selected "key" votes, picked 12 powerful members of Congress with low scores, and campaigned for their defeat. In the course of five elections, 52 incumbents made the dirty dozen list and 24 were defeated the same year (Keller, 1981). The League of Conservation Voters, also established in 1970, evaluates and publishes the environmental record of public officials and supports those with outstanding environmental records, mainly when elections appear to be close. In 1984, 40 of the congressional candidates it endorsed won their contests while 21 lost.

Large-membership environmental groups have been slower to make electoral endorsements. In 1980 the Sierra Club endorsed a few California legislative candidates on a trial basis. In February 1982 the Sierra Club made its first-ever federal endorsement of a Congressman: Sidney Yates (D-Illinois). By November 1982 it had backed 153 candidates for the House and 15 for the Senate in addition to ten gubernatorial candidates. Its overall success rate was an encouraging 80 percent. The vehicle for electoral involvement is the Sierra Club Committee on Political Education (SCCOPE), an eight-person national committee, appointed by the club's executive committee, which is responsible for endorsing federal candidates, overseeing compliance with election laws, and mapping electoral strategy. The 1982 success at the polls, in addition to the "abysmal record" of the incumbent president, led the board of directors of the Sierra Club along with other groups to take the unprecedented step of endorsing Walter Mondale for the 1984 presidential election. A number of signals may have misled groups to exaggerate their possible influence on voters: rapid growth of membership and contributions and the very favorable responses of the electorate to opinion polls on environmental issues (Mitchell, 1984).

The loss at the polls for environmentalists was offset by valuable electoral experience. Moreover, for environmentalists the Reagan environmental record was so poor as to give them little choice. Further, little was sacrificed and a few gains were made. A Sierra Club representative reported that there was little sign of dissatisfaction among Republican members. Contributions may have suffered slightly. In light of the experience generated, the 1984 environmental leaders envisioned greater future participation in recruitment of candidates, in primaries, and in political party conventions. They saw their greatest potential in areas where the supply of numbers of grassroots workers could be significant to the outcome. The trend of increasing interest group involvement continued throughout the 1980s, with the Sierra Club often endorsing upwards of 200 candidates in particular elections and spending millions of dollars throughout the decade on electioneering (McCloskey, 1992). Even so, there remains some doubt about the efficacy of environmentalist election strategies in creating an environmentally conscious Congress. In spite of the victories of environmentalist-endorsed candidates to Congress, a green wave has not emerged in Congress and mainstream environmental forces still see the scarcity of committed backers in the legislature as a major impediment to environmentally sensitive policy. As election campaigns have become increasingly expensive and dominated by the mass media, grassroots volunteers have become less important and feel more isolated. As long as money remains so important in elections and environmental groups stay poor relative to industry and trade lobbies, electoral campaigns will continue to be of limited use to environmental groups.

Litigation

An option often followed by environmental groups since the 1970s is the litigation of environmental disputes. Litigation has proven a very powerful tool to expand and enforce environmental protection statutes. However, appealing to the courts is risky in that victory is not preordained. A successful litigation strategy depends on numerous factors in the political environment (Wasby, 1983). These conditions include (1) accessibility of the courts to the environmental groups, as reflected in the issue of standing to sue or the availability of fee awards to litigants, (2) estimates of the costs and benefits to the organization of a litigation strategy or alternative course of action—the extent to which members of the organization will be supportive of litigation, (3) the existence of a favorable distribution of opinions among the general public or attentive publics, and (4) the complexity of the legal and constitutional issues themselves. Wasby (1983) stresses, however, that intraorganizational and interorganizational factors may be paramount. These factors include control over timing and sequence of cases, the identification of legal issues, the extent to which the strategy is flexible in response to changes in litigational conditions, and perhaps most importantly, whether the organizations are membership-based or essentially nonmembership groups. In addition to these formal factors that help determine success in litigation, it should be noted that the extremely high expense of litigation makes it an option primarily of the wealthier mainstream groups. While grassroots public interest law firms champion local interests, some specifically devoted to environmental law, resources for these groups are scarce, especially when compared to resources available to industry and government.

That the litigious strategy is highly variable in its utility to the environmental movement is demonstrated by evidence for the decade 1970–1980, the first "environmental decade" (Wenner, 1982). Environmental groups tended to win about as often as economic interest groups, but governmental agencies, when they took the initiative, tended to be the most successful of all. When environmental groups have been challenged by conservative legal foundations in court the evidence suggests that the environmental groups are likely to come out on top (Hassler and O'Conner, 1986).

For some time environmental groups were severely threatened in their litigation efforts by decisions by the Supreme Court that limited their standing (the organization or its members could not demonstrate direct injury owing to a governmental agency's action). Further, public interest law firms and public foundations feared the Internal Revenue Service would revoke their tax-exempt status if they were found to be trying to substantially influence legislation. In a series of cases beginning in 1966 with *Scenic Hudson Preservation Conference v. FPC,* 354 F.2d 50F, 2d Cir. 1965, cert. denied 384 U.S. 941 (1966), and *Sierra Club v. Morton,* 405 U.S.

at 737 (1972), the Supreme Court relaxed the standards for standing so that environmental groups could in effect represent those whose environment was injured. Another victory came when the Internal Revenue Service reviewed its standards and granted tax-exempt status to environmental law groups.

As conservative judges appointed by Presidents Reagan and Bush grew in influence, environmentalist success in the courts diminished. David Doniger, an NRDC lawyer, declares: "In the early eighties, we were finding the courts very receptive. You'd almost go in with a calendar rather than a brief and say, 'The law says this is supposed to happen in six months or a year,' and you'd get a court order. More recently, we've had more trouble. The appeals court in the District of Columbia is being more aggressive in saying, if there is not an explicit deadline, we're going to assume Congress did not intend one and we'll give the agency as much time as it damn well pleases" (Greider, 1992:149). Although the change in judicial composition is a long process, since federal judges receive lifetime tenure, it will be interesting to chart the evolution of the court and environmentalist strategies after Clinton appointees have become more numerous.

Entrepreneurship and Organization-Building

As previously indicated, rational actor theorists such as Mancur Olson see little likelihood of significant activities among individuals or groups, except where economic interests are highly concentrated and provide selective benefits. Salisbury highlights the leadership role, but his analysis, too, remains heavily rooted in economic rationality: interest group entrepreneurs are seen as little more than businesspeople marketing products. This rational actor perspective misses one of the most important elements of entrepreneurship in environmental organizations: the leadership of most mainstream organizations, and practically all local and grassroots groups, are deeply committed to the achievement of environmental goals. Some disagreement occurs over the priority of goals and the means to achieve them, but in their hearts environmental group leaders have preserved their commitment to environmentalism even when organizations have become highly bureaucratic (McCloskey, 1992).

Leaders of many environmental organizations, both within and outside the mainstream, attempt to dramatize issues—particularly in combating the perceived enemy or devil that has created the threat or the unsavory condition to which the group objects (Berry, 1984). The evidence is strong that expressive appeals have a powerful impact on attentive publics. Even though individuals know that their contribution alone will make little difference and that, if the organization wins, benefits will be shared in common with others, including free-riders who did not help achieve victory, they contribute. Members are prepared to support this activity with their money and even their energy (Smith, 1984).

The technology for creating mass membership and thus more financial security vastly improved over the past two decades. Direct mailings to individuals who are deemed likely to be sympathetic to the environmentalist cause have proven to be a lucrative source of financial and mass support for environmentalist organizations, as they have to other organizations. By appealing to widely shared fears of environmental crises and offering such benefits as magazines and newsletters, books, and other benefits, environmental organizations have been able to attract supporters capable of paying the rather modest annual memberships fees.

Environmental group leaders must manage big budgets and memberships but involvement in internal organizational matters has limits. Many of the grassroots organizations and more radical national groups such as Earth First! deliberately eschew any pretense of managerial efficiency. Leadership in these organizations is marked more by commitment to goals, charisma, and expertise than an ability to balanced budgets or efficient staff management. Even among mainstream groups the emphasis on professional management skills appears to have diminished. To be sure, guaranteeing funding and membership bases is a high priority, but the new breed of leadership, exemplified by Carl Pope and G. Jon Roush, speaks in terms of increasing membership diversity, involvement of individual members, and affiliations with the grassroots (*Sierra,* 1993; Kriz, 1994). In addition, Michael McCloskey, former executive director, now, chairman of the board of the Sierra Club, believes that interest group leaders are beginning to recognize that Americans want environmental groups that do more than manage internal resources efficiently. McCloskey (1992) declares mainstream groups must prove that they have the ideas and influence to bring about environmental change.

Maintaining Cohesion

Pluralist theory has identified maintenance of cohesion, or allegiance to shared, common interests in the face of centrifugal forces of diverse, separate claims as a critical variable influencing political success. In spite of improved strategic and organizational changes made by the mainstream groups to improve their standing in the national political arena, there are growing stresses on the environmental community's cohesion. Moderation and accommodation of polluting interests is perceived by some as a sacrifice of principle on the part of mainstream groups. The increased sophistication of mainstream leadership in the labyrinth of Washington policy making appears to many grassroots environmentalists as co-optation. The attention of national groups upon Congress and federal legislation has diverted attention from the grassroots and some rapidly emerging changes in local priorities (Rheem, 1987; Gottlieb and Ingram, 1988).

An important segment of the environmental community has taken issue with the notion that environmental groups are just another lobby. Inside negotiations conducted in closed forums, the use of computerized-mail technology in large-scale membership and fund-raising campaigns, and the passive role of the membership of groups in setting priorities has alienated some who hoped environmental groups were different. Some of these critics are attracted to relatively extreme groups such as Earth First! and Greenpeace, whose members engage in direct action rather than indirect political bargaining. Others have abandoned the national level and contributed to the growth of local and regional groups. As repeatedly suggested in this chapter, environmental groups outside the mainstream are not inconsequential bystanders in environmental debates. Through their actions difficult issues that probably would otherwise have been ignored have reached the environmental agenda. For instance, through the persistence of grassroots advocates, President Clinton issued Executive Order 12989 dealing with environmental justice, mandating, among other things, that all federal agencies consider the environmental justice consequences of their actions (Lee, 1994). Additionally, criticisms of compromise may restrain the leaders of mainline groups from the appearance of excessive moderation. And, as a reaction to critiques, mainstream groups are beginning to focus on diversity, grassroots participation, and environmental conditions at the local level.

Nevertheless, certain cleavages persist. Still at issue within the environmental community is appropriate emphasis placed on conservation concern as opposed to more recently emergent fears about toxic wastes. Greenpeace, with their radical and grassroots tendencies, was a strong, early advocate in the fight against pollution. Other national and international groups have responded more slowly and uncertainly to groundswells of activism among local residents who fear for community health. Groups such as NRDC and the Sierra Club recognize these claims and focus to some degree on toxic pollution. However, stark differences exist in the urgency and salience with which mainstream and local forces approach geographically specific health threats. Some groups, such as the Sierra Club, have fashioned programs like "Hunt the Dump" that aid members in identifying potential neighborhood hazards. Fearing that excessive localism may thwart rational natural resource planning, some environmentalists have urged groups to stay aloof from what they regard as essentially local land use questions. Further, they worry that health and quality-of-life matters may diffuse the necessary attention to national issues, such as endangered species protection, raising national standards for environmental quality, and conserving national resources including parks, forests, and wildlife.

This lack of cohesion within the environmental community has both negative and positive consequences. On the negative side, without a clear agenda and unified lobbying force the ability to influence Congress and the design of legislation may be somewhat diminished. Likewise, a more unified movement would probably have a better chance to improve implementation of environmental laws. On the other hand, the diversity within the environmental community increases the ability of citizens to involve themselves in groups dedicated to issues important to themselves. Fragmentation and diversity allow for several items to be placed on the environmental agenda at once. Given the potentially destructive capabilities of unaddressed environmental threats, focusing on multiple issues simultaneously may be extremely important.

There are other positive values associated with a strong and diverse interest group community. Valelly argues that "reconnected citizenship" is the key to improving public policy outcomes. The principal mechanism that Valelly offers for generating this connection between citizens and public policy is interest groups. He contends that the success of the Emergency Planning and Community Right-to-Know Act, incorporated in the 1986 Superfund reauthorization, is due to citizen and interest group activities (Valelly, 1993). Thus, environmentalists should be concerned with a lack of cohesion only to the extent that different factions within the overall community result in full-blown conflicts between mutually exclusive goals. Currently, in spite of the environmental community's divisions, this type of discord does not characterize relations among environmental groups.

Prospects for the Future

The American political system is notable for its fragmented, pluralistic structure. Decisions in the public sector result from a process of group interaction within a framework of accepted capitalist values. Authoritative writers on its present and future character are in general agreement that few signs or forces on the horizon indicate a substantial alteration of that structure. The perspective of this chapter has been that environmental groups are best understood within the context of pluralist politics. Though writers like Gottlieb and Paehlke would disagree, there is little evidence to suggest that environmentalism will spawn a social movement that will challenge the foundations of pluralist politics (Gottlieb, 1993; Paehlke, 1989). Moreover, environmental groups provide little evidence of a rational actor challenge to pluralism. In their disregard for narrowly construed self-interest, members of environmental groups defy the predictions of writers like Olson (Olson, 1965). The evidence shows that the growth in the number and size of environmental interest groups has responded to numerous factors, such as ideological appeals and concerns over public policy as well as to the influence of entrepreneurs committed to environmental improvement.

What is not so clearly established is the actual effect that environmental groups, either within or outside the mainstream, have on public policy. It has been established that the mainstream groups are active participants in the environmental policy system that controls the design and implementation of federal environmental legislation. However, the influence and autonomy of environmentalists within this system is unclear. Even if the mainstream groups are influential, does the system's tendency to fragment issues prevent the holistic approach necessary for the design of appropriate public policy? Likewise, to what extent have grassroots groups substantively changed environmental quality at the local level? Are the grassroots groups merely reactionary blockers of positive development proposals or have they become effective proactive participants in policy design?

Among the problems facing the environmental community are:

1. *The challenges of the grassroots.* Mainstream groups must adapt to a changing political context. Much of the success of environmentalism will depend upon how well the national groups can adjust to the presence of these groups and the extent that grassroots and mainstream groups can work in harmony. Grassroots groups face challenges of their own. The extent of their contribution to environmental quality in local communities will ultimately depend more on their ability to create a positive shared vision than upon their ability to defeat specific development proposals.

2. *Maintaining membership without the confrontation of the Reagan-Bush years.* Data indicate that many groups are currently experiencing a membership decline. Without a clear enemy in high office or an immediate credible threat, maintaining high levels of involvement may be difficult. A further problem of high membership turnover introduced associated problems of building esprit de corps and common identity. Yet, Carl Pope of the Sierra

Club envisions doubling the group's membership by the year 2000 (*Sierra*, 1993). Must environmental groups continue to attract new recruits in order to be influential?

3. *Influencing public policy and environmental change.* Despite the institutionalization of environmental concerns, there appears little significant progress resulting in substantive change. Biodiversity is still declining nearly thirty years after the first federal legislation aimed at preventing extinction; toxic pollution is essentially unabated in spite of almost two decades' experience with Superfund and the Resource Conservation and Recovery Act; the list of unfulfilled policy promises goes on to include air and water pollution, wilderness protection, and so forth. Mainstream groups, especially, must emphasize the improvement of environmental conditions, not just the efficient management of their organizations. In the 1990s the reauthorization of several environmental statutes, such as the Endangered Species Act, Superfund, and the Clean Water Act will test the ability of mainstream groups to marshall their resources and to elicit the aid of local and grassroots organizations in design and support of effective legislation. Further, at the local level, environmentally concerned citizens must be given effective means to protect and improve the quality of their living space.

Prospects for Research

The pluralist nature of American politics is reflected in the considerable differentiation that exists within the environmental community. More research is needed on the particular groups and interests that make up the whole, especially those groups outside of the mainstream. How are the more radical national groups, who believe that broad social change is essential, reacting to the "technocrats" who are assuming the leadership of mainstream groups? Grassroots organizations often inspired by local toxic pollution, public health, and growth control issues have different motivations and different sorts of leadership than national organizations. What is the relation of such groups to mainstream organizations? Are they coopted by groups at the national level, and if so on what terms? What is the relative strength of local and grassroots environmentalists at state capitols and city halls? What strategies are being used, and how effectively?

The central question that remains to be resolved concerns pluralism itself. We now know that the free-rider problem to group formation and maintenance and other impediments predicted by rational-actor theory can be overcome. What is considerably less well understood is the impact exercised by public interest groups in general, and environmental groups in particular, over political decisions in a pluralist system often dominated by powerful economic actors. Evidence indicates that groups within and outside the mainstream can have a great deal of influence on agenda setting, as well as considerable veto power. However, for the environmental community to achieve its objectives, it must be a powerful active force in the design and implementation of public policy. The degree to which this can be accomplished will be the legacy of twentieth-century environmentalism.

Note

1 The Group of Ten included the CEOs of the Environmental Defense Fund, Environmental Policy Institute, Friends of the Earth, Izaak Walton League, National Audubon Society, National Parks and Conservation Association, National Wildlife Federation, Natural Resources Defense Council, Sierra Club, and Wilderness Society.

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6

Political Parties and Environmental Policy

Sheldon Kamieniecki

Although political parties are never mentioned in the U.S. Constitution, they have played a central role in American politics since the birth of the nation. Unlike interest groups, parties recruit and nominate candidates to public office. Voters, in turn, use party labels as a guide in differentiating between the candidates on the ballot. Parties are most successful when they are able to mobilize their followers and elect their candidates; they represent important symbols for many Americans and are often used as a cue in deciding which policies to favor and which ones to oppose. More often than not, they have provided a critical link between citizens and their elected leaders in the policy-making process.

Given the vital role of parties in American politics, it is not surprising to find considerable research on the relationship between parties and environmental policy. The literature on this relationship reveals two competing perspectives. Early writings suggest that support for improved natural resource management is nonpartisan in nature (Ogden, 1971; Edmunds and Letey, 1973). These studies maintain that, like "motherhood and apple pie," environmental issues are "consensus issues." Most researchers, however, reject this view and report substantial differences on environmental policies among partisans (Engelbert, 1961; Dunlap and Gale, 1974; Ritt and Ostheimer, 1974; Dunlap and Allen, 1976; Lester, 1980; Kenski and Kenski, 1981; Calvert, 1979; 1989). Their studies show that Republicans and Democrats take opposing positions on major environmental issues, with Democrats nearly always more supportive of pollution control measures than Republicans.

This chapter reviews previous research and presents new data on the relationship between party and environmental policy. Specifically, this study analyzes the changing environmental issue positions of the Republican and Democratic parties over time by examining party platforms, roll call voting in the U.S. Congress and state legislatures, and public attitudes. The competing influence of political ideology also is assessed in an examination of roll call voting and voter attitudes. As the reader will see, the findings reported in this chapter are surprising and have important implications for future debates over the partisan nature of environmental politics.

Partisanship, Ideology, and Environmentalism

It is impossible to identify with certainty the direction of causation between political ideology (i.e., liberal versus conservative), party identification, and environmentalism. In most European countries, religion, social class, and positions on the issues, such as environmental protection, structure people's ideologies and, in turn, partisan orientations. The strong influence of religion, social class, and ideology over party support reflect the continent's historical and often violent conflicts among religious groups and between citizens and their monarchies. The United States, in contrast, has never experienced such deep and enduring turmoil. This country also has never had a large servile feudal class, except for African American slaves, nor a king or queen. Rather, class differences have always been tempered by the hope of social and economic upward mobility and by the widespread belief that, through hard work, everyone can attain the "American dream." As a result, ideology and partisanship are thought to be interrelated in a psychologically intricate and abstract way (Kamieniecki, 1985).

Moreover, in Carmines and Stimson's (1980) issue typology, environmental controversies are "hard" issues: they are multifaceted and complex, tend to address policy means rather than ends, and have existed for a relatively short time. Like most "hard" issues, it is difficult for people to conceptualize environmental issues in ideological or partisan terms. "Easy" issues (e.g., race), in comparison, more readily lend themselves to ideological and partisan evaluations. It is therefore unclear in the American context that partisanship "directly causes" environmentalism, ideology "directly causes" environmentalism, or that environmentalism "directly causes" partisanship and/or ideology.[1] It is probably more accurate to say, instead, that ideology, partisanship, and environmentalism share a complicated and interconnected relationship.

Nevertheless, there are certain characteristics associated with being a Republican or a Democrat that appear to translate into support for or opposition to environmental protection. According to Dunlap and Gale

(1974), policies and proposals aimed at halting environmental degradation are normally opposed by "big" business and industry, require expansion of governmental regulation and intervention, and are necessarily innovative in nature. The two researchers argue that "compared to the Democratic party, the Republican party has traditionally maintained . . . a more pro-business orientation, a greater opposition to the extension of governmental activities and regulations, and a less innovative and more cautious posture concerning attempts to ameliorate societal problems" (1974:675). Thus, Republicans are generally less in favor of pollution control measures than Democrats.

Despite what commentators often imply, not all Republicans are conservative and not all Democrats are liberal. For a long time the Republican party has enjoyed support from many liberals in the Northeast, and the Democratic party has received the backing of conservatives in the South. On the whole, however, it is fair to say that the Republican party tends to take more conservative stands on major domestic and foreign policy issues than the Democratic party.

The infatuation of conservatives with rapid and unencumbered economic growth at almost any cost largely explains their antagonism toward policies designed to improve environmental quality. This explains the strong support among conservatives for President Reagan's economic policies and for the work of Vice President Quayle's Council on Competitiveness, often at the expense of environmental protection. Liberals, in contrast, opposed Reagan's proposals and the council's activities because of their perceived long-term negative effects on society and the environment. Liberals rejected the notion, perpetuated by senior officials in both the Reagan and Bush administrations, that jobs and economic growth would be sacrificed if the country conserved natural resources for future generations.

Paehlke's (1989) work, however, suggests that political ideology is orthogonal to environmentalism. He believes that environmentalism is a new ideology and system of values, and that it cannot be easily placed in traditional liberal or conservative contexts. In fact, environmentalism is thought by Paehlke to have the potential of driving progressive politics in the future. In order for this to happen, he believes that environmentalists must begin to appeal to neoconservatives, something he feels would not be difficult. Whether this will occur remains to be seen. Regardless, most empirical research points to a weak but consistent link between political ideology, party identification, and environmentalism.

Components of Political Parties

Beck and Sorauf (1992) believe that political parties have three parts, a party organization, a party in government, and a party in the electorate. As Beck and Sorauf explain, "The major American political parties are, in truth, best conceptualized as three-headed political giants—tripartite systems of interactions that embrace party leaders and officials and the thousands of anonymous activists who work for candidates and party causes, the people who vote for the party's candidates, and the men and women elected to office on the party's label" (1992:10). The two authors emphasize that "it is important not to lose sight of the fact that much of the character of the American parties is defined by . . . the dynamic interaction among the parts" (1992:11). Keeping this in mind, this study follows Beck and Sorauf's three-part party framework in its analysis of the relationship between party and environmental policy.

Party as an Organization:
Party Platforms

Party platforms are largely formulated by the party organization prior to presidential elections. More specifically, platforms are written by convention delegates, and their contents often reflect the positions and goals of the front-runner (if there is one) for the party's nomination for president. Platform pledges indicate to the public the kinds of policies the party will enact if its candidates are elected to office. While some researchers view platforms with some cynicism (e.g., Beck and Sorauf, 1992), others have shown platforms to reflect closely the positions of followers and the public (e.g., Monroe, 1983). A recent study, in fact, reveals the existence of strong links between postwar (1948–1985) election platforms and governmental expenditures and shows this to be true for a number of issues, including natural resources and the environment (Budge and Hofferbert, 1990). This research challenges those who argue that parties are too weak to get programs enacted.

Engelbert's (1961) early study presents an exhaustive historical review and analysis of the positions of political parties on natural resource policy issues. Among other things, he finds substantial differences between Republican and Democratic national party platforms. Specifically, he finds that since 1860 the Democratic Party, on the whole, has placed greater emphasis on natural resource questions in its platforms than the Republican Party. Republicans, in contrast, have expressed more concern with states' rights and private development of natural resources and have been especially critical of Democratic policies involving federal control of resources. These differences, in Engelbert's view, appear to color executive and legislative performance, depending upon which party is in control of the institutional levers of power.

Since Engelbert's analysis, little research has been done on how the platforms of the two major parties address crucial environmental problems. My study updates Engelbert's investigation by comparing Republican and Democratic party platforms over the last three decades. It examines whether and, if so, to what extent there continues to be disagreement between the platform pledges of the two parties on environmental issues.

Party in Government: Congress and State Legislatures

Clearly, the Congress and state legislatures have a major impact on environmental policy-making. Calvert (1989) argues that while executive, administrative, and judicial bodies play a significant role in natural resource policy, they are obliged to operate within a policy sphere whose parameters have been established by prior legislative action. Clearly, it is Congress and state legislatures that provide funds and set standards for preserving the quality of the nation's environment. Concerning the partisan nature of these legislative bodies, Calvert says:

> The engine that drives the legislative process is the political party organization of Congress and the state legislatures and in many institutions of local government. It is in this process that parties "deliver" on the promises made to the voting public and to organized interests, and it is here that the parties face each other in public combat over the allocation of values. (1989:160)

It is therefore important to analyze the nature and extent of partisan differences of national and state legislators on environmental policy.

Several researchers have examined congressional voting records on environmental issues. Ritt and Ostheimer (1974), for example, use ratings of members of Congress by the League of Conservation Voters, a nonpartisan organization, to investigate the association between political ideology, partisanship, several control variables, and votes on environmental legislation. They find that northern Democrats are very supportive of environmental initiatives while Republicans and southern Democrats are less likely to back these type of proposals. Liberal Democrats, in fact, tend to be the most supportive of legislation intended to protect the environment.

Dunlap and Allen's (1976) extensive study also finds that Democrats are more in favor of environmental protection than Republicans in the U.S. House of Representatives. This is particularly true in the North even after controlling for eleven constituency characteristics and nine personal characteristics of legislators. They, too, report liberals to be more in favor of environmental protection than conservatives.

Kenski and Kenski (1981) and Calvert (1989) report similar findings concerning political ideology, partisanship, and votes on environmental legislation in both houses of Congress. The former study, however, suggests that ideology is more important than partisanship.[2] Calvert (1989), in contrast, shows that ideology and partisanship play equally strong roles in explaining support for environmental proposals in both houses of Congress between 1981 and 1984. Whatever the case may be, most research on Congress challenges the view that environmental issues are nonpartisan in nature.

Similar findings are reported in analyses of roll call voting in state legislatures. Dunlap and Gale's (1974) investigation of Oregon state legislators indicates that Democrats in both the House and Senate are considerably more supportive of environmental measures than Republicans. Controlling for constituency support for environmental protection and the education, occupation, and place of residence (urban versus rural) of representatives does not eliminate the relationship. The same results are found in studies of California (McCloskey and Zierold, 1971) and Utah (Albrecht et al. 1975). Lester (1980) also reveals that Democratic partisanship leads to the adoption of environmental policies across the fifty states, especially outside the South. Likewise, Calvert's analysis of Montana (1979) and later of ten state legislatures (1989) shows that Democrats are clearly more supportive of environmental legislation than Republicans. In fact, he observes that "the level of partisan differences on environmental issues at the state level is similar to that found in Congress" (1989:173). Whether this is still the case in the 1990s is determined in the present study.

Party in the Electorate

In contrast to research on party platforms and roll call voting in Congress and state legislatures, previous studies indicate small differences between the attitudes of Republicans and Democrats toward environmental protection in the electorate (Buttel and Flinn, 1974; 1978; Springer and Constantini, 1974; Dunlap, 1975). Differences that have been reported are in the expected direction, with Democrats and independents more supportive of efforts to protect the environment than Republicans. With respect to the relationship between political ideology and opinion on environmental issues among citizens, previous research shows liberals to be more enthusiastic about improving environmental quality than conservatives, regardless of party affiliation (Dillman and Christenson, 1972; Dunlap, 1975; Buttel and Flinn, 1978; Calvert, 1979). In fact, this research consistently reveals a stronger relationship to exist between ideology and environmentalism than between partisanship and environmentalism among citizens. One would therefore expect to find similar results in this analysis.

The Data

This study analyzes data on party platforms between 1976 and 1992, roll call votes in Congress between 1973 and 1992, roll call votes in state legislatures between 1980 and 1992, and public attitudes between 1973 and 1991. Summaries of positions on environmental issues in party platforms between 1976 and 1988 are from McGuiness (1991). Publications by the national committees of the Republican (1992) and Democratic (1992) parties provide information about the 1992 platforms. Data on roll call voting in Congress are based on ratings by the League of Conservation Voters (LCV).[3] Similar data for state legislatures are taken from various state environmental organizations. Finally, the National Opinion Research Council (NORC) General Social Survey, 1973–1991, and the Center for Political Studies (CPS) American National Election Study, 1990, are used to examine public attitudes.[4] Up until now, no investigation has analyzed party platforms, roll call voting in both the Congress and state legislatures, public attitudes, and environmental policy over three decades.

Findings

As discussed earlier, previous research reports significant differences between Republican and Democratic party platforms on natural resource issues. Table 6.1 lists the key elements of positions on environmental issues in party platforms between 1976 and 1992. Clearly, the two major parties have disagreed substantially on environmental policy since 1976. While the Democratic Party has generally called for increased spending, additional government action, and overall stronger efforts to control pollution, the Republican Party has favored little or no government intervention (except for minimal state and local actions) and a relaxation of current pollution control restrictions so that economic growth is not impeded. More recently, Republicans have called for private ownership of natural resources as a way to prevent environmental degradation.

Table 6.1 Key Elements of Positions on Environmental Issues in Party Platforms, 1976–1992

Democratic Party Platform	Year	Republican Party Platform
Environmental protection is necessary to achieve a more just society. Air and water pollution control linked to health; economic impacts should be uniform across the country. Controls on strip mining endorsed.	1976	Clean air policy and land use planning are the responsibility of state and local government. Government regulation of coal mining should be minimal. Accelerate use of nuclear power.
Energy production and use linked to environmental protection. Energy conservation is high priority and nuclear waste disposal problem must be resolved.	1980	Clean Air Act regulations are too stringent and require reform. Benefits of environmental laws must justify the costs. Nation's energy supplies should be increased.
Superfund and other hazardous programs must be fully implemented. Clean Air and Water Acts should be strengthened. EPA's budget should be restored. Expansion of National Wilderness Preservation System is backed.	1984	Environmental protection must be balanced by economic growth to improve standard of living. More coal should be mined and more oil and natural gas developed. Increase number of nuclear power plants.
Offshore oil drilling strongly opposed. The U.S. should convene international summits to address depletion of ozone layer, global warming, and destruction of tropical forests. Promote energy conservation and the increased use of renewable energy sources; reduce reliance on nuclear power. More aggressive enforcement of environmental laws is necessary.	1988	Expand use of nuclear power but in an environmentally safe manner. Efforts to reduce air and water pollution, control hazardous waste disposal, protect the public lands, and prevent ocean dumping are supported. Takes credit for renewal of Superfund.
A genuine "no net loss" policy on wetlands is endorsed. Recommends establishment of a civilian youth conservation corps. Strongly opposes efforts by Republicans to weaken the 1990 Clean Air Act in the "guise" of	1992	Will not tolerate obstruction of expansion of international trade. Property rights of farmers, ranchers, and foresters must be protected. Supports drilling in the Arctic National Wildlife Refuge and the Outer Continental Shelf.

Table 6.1 Continued

Democratic Party Platform	Year	Republican Party Platform
competitiveness. Supports recycling, energy efficiency, and pollution prevention strategies. Nation's many critical environmental areas must be protected. All multilateral trade agreements (e.g., GATT, NAFTA) must address environmental concerns. U.S. must be a more aggressive world leader in addressing global warming, depletion of ozone layer, biodiversity, and explosive population growth.		Public lands should be used for mining, oil and gas exploration, and lumber. Private ownership and economic growth is best security against environmental degradation. Takes credit for passage of the 1990 Clean Air Act. Defends President Bush's actions at the Rio Conference. Believes nation must protect its natural environment.

SOURCE: Derived from summaries of party platforms reported in McGuiness (1991) and the full party platforms published by the Republican and Democratic party national committees in 1992.

What is not clearly apparent in table 6.1 is that the 1992 Republican party platform devotes more attention to environmental concerns than previous platforms. Near the end of the relatively long section on environmental issues, the party states that "[e]nvironmental progress must continue in tandem with economic growth" (1992:95). This represents a significant break from the past. Admittedly, many of the pledges on crucial issues are often stated in vague and general terms. Nevertheless, the increased focus on environmental matters in the 1992 platform signals a realization among Republican party officials that the party must now appear "environmentally friendly" or else risk losing votes in national elections.

Green Party Platforms

Although many advanced industrialized societies have had a national ecological party for a number of years, the United States only recently acquired its own. The Green Party USA was established in August 1991 at the first Green Congress (Day, 1992). The party has 142 local chapters and 170 affiliated organizations in 46 states and 22 elected officials in 14 local governments. The Green Party USA platform in 1992 promoted a program entitled "Ten Key Values," which included ecological wisdom, grassroots democracy, personal and social responsibility, nonviolence, decentralization, community-based economics, postpatriarchal values, respect for diversity, global responsibility, and future focus (Day, 1992:53–55).

Of course, ecological parties have been active, at least at the local level, in Canada, Japan, and Western Europe for quite some time (Kamieniecki, 1993). Ecological parties are currently represented in several national parliaments in Europe as well as in the European Parliament.[5] In a few countries the green parties already have a significant effect on the process of coalition building, while in other countries they challenge traditional institutions and attempt to persuade conventional parties to change their policy. In some cases, small liberal parties view the Greens as a serious challenge to their continued electoral survival.

While the precise issues of interest and policy positions differ from country to country, common elements are present in their party platforms. First and foremost, Green parties believe that their nations are in the midst of an ecological and economic crisis that threatens the future of the world. The symptoms of this crisis are human exploitation and environmental degradation, which are manifested in capitalism and uncontrolled economic growth. In addition to demanding strict environmental regulations, they favor just distribution of goods and services to the socially disadvantaged. The ecological parties often take strong stands on sexual discrimination, nuclear energy, and disarmament. Some promote the rights of foreign workers, gypsies, homosexuals, disabled people, prisoners, the elderly, and animals. Greens generally voice concern about problems in poverty-stricken countries, and they support a more equitable distribution of wealth between affluent and less affluent nations. They favor decentralization and individualistic, self-determined participation, have a grassroots orientation, and closely adhere to egalitarian and democratic principles and practices. Despite the fact that ecological parties have attracted only a small percentage of voters in most elections, established parties now feel they must take positions on major environmental questions or risk losing voter support to the Greens.

Roll Call Voting in Congress and State Legislatures

Votes on major environmental bills in the U.S. Congress and state legislatures provide a good indicator of the role of party in government, particularly within the context of natural resource conservation. As reported earlier, prior research shows substantial differences in support for increased

Table 6.2 Mean National Support for Environmental Legislation by Party in the U.S. House and Senate, 1973–1992

Year	Democrats	Republicans
House of Representatives		
1973–74	57.9%	39.4%
1975–76	58.0	32.0
1977–78	57.2	30.3
1981	63.2	31.5
1982	71.0	34.2
1983	68.5	31.6
1984	68.5	36.4
1989–90	73.5	37.1
1991–92	60.9	18.6
Senate		
1973–74	57.2	41.2
1975–76	53.1	28.6
1977–78	63.6	31.9
1981	59.4	28.4
1982	61.4	29.7
1983–84	71.1	36.5
1989–90	67.3	29.9
1991–92	64.0	24.1

SOURCE: All ratings are by the League of Conservation Voters. Data for 1973–78 were derived from Kenski and Kenski 1981, data for 1981–84 were derived from Calvert 1989, and data for 1989–92 were collected by the author.

environmental protection between the two major parties: Democrats are more likely to favor pollution control than Republicans.

Table 6.2 reveals the average League of Conservation Voters (LCV) ratings for Republicans and Democrats in the U.S. House of Representatives and U.S. Senate between 1973 and 1992. The data support previous findings and show Democrats to be more likely than Republicans to vote in favor of environmental legislation in both houses over the nineteen years. The differences are especially large during the Reagan and Bush administrations, where in some years support for environmental legislation is twice as high among Democrats than among Republicans. This probably reflects the tendency of representatives in both parties to band together to vote in favor of or in opposition to Reagan's and Bush's controversial environmental policies.

Table 6.3 sheds some light on whether differences in party support for protecting the environment in Congress is due to political ideology or due

Table 6.3 Party, Political Ideology, and Environmental Support in the U.S. House and Senate, 1981–1984

Level of Environmental Support	Party		Ideology		
	Dem.	Rep.	Lib.	Mod.	Cons.
U.S. House					
Nation					
High	53.2%	8.7%	85.6%	36.4%	2.1%
Medium	39.2	37.5	14.4	61.0	42.0
Low	7.6	53.8	0.0	2.6	55.9
	Gamma = .82			Gamma = .92	
East					
High	70.7	28.5	85.2	40.5	5.3
Medium	28.6	53.9	14.8	57.1	59.6
Low	0.7	17.6	0.0	2.4	35.1
	Gamma = .73			Gamma = .89	
South					
High	15.2	0.0	64.6	24.3	2.0
Medium	62.5	23.4	35.4	68.9	45.0
Low	22.3	76.6	0.0	6.8	53.0
	Gamma = .81			Gamma = .87	
Midwest					
High	72.3	5.8	92.9	34.5	2.6
Medium	27.7	50.0	7.1	64.4	46.4
Low	0.0	44.2	0.0	1.1	51.0
	Gamma = .96			Gamma = .96	
West					
High	73.8	0.7	81.6	46.2	0.0
Medium	26.2	15.0	18.4	53.8	12.7
Low	0.0	84.3	0.0	0.0	87.3
	Gamma = .99			Gamma = .93	
U.S. Senate					
Nation					
High	46.4	4.9	84.0	21.6	2.3
Medium	44.1	43.8	14.4	75.7	40.7
Low	9.5	51.8	1.6	2.7	57.0
	Gamma = .82			Gamma = .92	

SOURCE: Calvert 1989.

to partisanship. A mean conservative coalition support ratio score (CCSR) was computed for each member of Congress in order to test for the influence of ideology (Kenski and Kenski, 1981; Calvert, 1989). Overall, the relationships between ideology, party affiliation, and environmentalism are very strong. In addition, the correlations between party and votes on environmental legislation are as strong as those between ideology and votes on the same legislation in the nation in general, and in three out of four regions in particular. The one exception is the East where party influence over environmental protection is not as great as ideology. The greater presence of liberals and moderates among Republican representatives in this region probably explains this result. The main finding in table 6.3, however, is that ideology and partisanship are associated with support for environmental protection to an equal extent in Congress.

Many state environmental organizations, including sometimes local chapters of the LCV, compute ratings for individual state legislators based on their votes on environmental bills. Data on the voting patterns in twenty-five state legislatures were collected for this study and are reported in table 6.4.[6] As the table shows, Democrats tend to be more supportive of environmental measures than Republicans in legislatures outside the South. In contrast, Republicans and Democrats in southern states, specifically Florida, Missouri, North Carolina, South Carolina, Tennessee, and Virginia, demonstrate similar voting patterns on environmental legislation, something Calvert (1989) did not report in his analysis of state legislatures. This probably can be explained by the more conservative nature of Democratic state representatives in the South as well as the broad influence of oil, manufacturing, agricultural, and other polluting industries in this region of the country. No doubt, the dominance of these business interests in southern states has probably made it extremely difficult for local environmental groups to organize and persuade state representatives to enact tough pollution control policies.

Party Identification and Public Attitudes

Since 1973 the NORC General Social Survey, a national study of public attitudes, has included a question on federal spending on environmental protection (see Gluck, 1993). Respondents have been asked whether they believe federal spending should "increase," "decrease," or "remain about the same." The percentages of Republicans and Democrats who feel that spending should "increase" are reported in figure 6.1. According to the data, support for more spending on environmental protection among par-

Table 6.4 Mean Environmental Support in Selected State Legislatures, Both Houses, 1980–1992

		Support Scores			
		Senate		House	
State	Year	Dem.	Rep.	Dem.	Rep.
Alaska	1983–84	60.0%	46.0%	68.0%	30.0%
	1989–90	70.6	38.4	80.6	11.8
	1991–92	71.6	31.9	75.1	19.2
Arizona	1992	64.9	5.8	62.3	25.8
California	1980	64.1	46.0	74.8	38.8
	1981	40.5	20.6	69.8	51.8
	1982	51.5	32.6	76.7	40.0
	1983	57.3	30.9	77.8	32.7
	1984	75.1	41.1	84.4	40.2
	1991	80.6	35.9	90.7	15.3
Colorado	1992	85.4	32.2	86.4	43.6
Florida	1992	60.0	56.0	67.0	60.0
Idaho	1980	81.1	28.0	78.7	30.6
	1981	95.5	35.3	81.6	45.0
	1982	71.2	27.3	72.8	34.1
	1983	80.6	32.9	65.0	35.1
	1984	71.7	50.9	87.7	38.8
	1985	77.6	42.7	78.8	53.3
	1991–92	98.6	48.9	93.4	44.1
Illinois	1981	83.6	47.4	62.4	40.8
	1991	73.4	40.1	68.2	29.1
	1992	73.3	34.8	46.9	37.7
Kansas	1991–92	52.1	28.2	81.6	43.4
Maine	1987–88	66.4	30.4	64.8	23.7
	1989–90	68.2	24.9	75.5	25.9
	1991–92	60.0	29.2	46.9	18.7
Michigan	1987–90	68.3	46.0		
	1989–90			61.6	41.4
	1991–92			77.6	28.6
Minnesota	1991–92	61.8	38.6	81.1	42.9

Table 6.4 Continued

		Support Scores			
		Senate		House	
State	Year	Dem.	Rep.	Dem.	Rep.
Missouri	1991–92	57.8	56.6	55.4	41.3
Montana	1981	59.3	17.9	76.5	29.4
	1983	75.0	21.3	77.8	38.5
	1985	82.4	33.4	83.1	27.9
	1989	89.8	15.3	81.4	26.7
	1991	81.3	10.5	71.5	22.9
New York	1981	51.0	33.9	56.6	33.2
	1982	73.0	22.0	84.6	38.1
	1992	77.6	50.1	90.7	72.9
North Carolina	1991	77.8	75.0	68.9	41.2
Oregon	1981	76.7	23.4	69.9	38.8
	1983	80.2	41.5	78.2	40.1
	1989	94.2	29.4	75.7	38.5
	1991	79.0	29.0	63.0	13.0
Pennsylvania	1989–90	47.8	54.4	58.6	24.6
South Carolina	1989–92	33.2	54.4		
	1991–92			70.3	25.8
Tennessee	1991–92	60.1	56.5	49.9	47.1
Utah	1992	76.0	59.5	74.2	55.7
Vermont	1991–92	71.6	31.9	62.5	13.1
Virginia	1991	67.7	61.0	70.8	70.4
	1992	57.0	49.0	63.0	36.0
Washington	1981–82	60.8	17.9	66.7	16.0
	1983–84	71.3	30.3	84.3	17.9
	1989–90	59.5	27.9	75.3	26.1
	1991–92	59.2	17.0	76.3	15.7
Wisconsin	1981–82	79.1	34.8	78.2	19.5
	1983–84	69.5	36.1	77.4	37.7
	1991–92	73.9	37.1	78.6	23.3

Table 6.4 Continued

		Support Scores			
		Senate		House	
State	Year	Dem.	Rep.	Dem.	Rep.
Wyoming	1981–82	83.1	47.4	84.4	45.4
	1983	75.7	30.3	62.4	38.2
	1991	61.4	30.8	75.9	29.7
	1992	80.0	56.3	82.4	47.7

Mean support scores computed from roll call analyses by state-level environmental organizations.

SOURCE: Data for 1980–85 were derived from Calvert (1989). Data for 1987–92 were compiled by the author.

tisans starts out high in 1973, dips to its lowest point in 1980, and then rises sharply through the 1980s and early 1990s. The nation's economic difficulties in the early 1980s and early 1990s do not appear to have affected public attitudes on spending for environmental protection. The data also show that Democrats have been more in favor of increased government funding than Republicans throughout much of the 1970s and 1980s. By 1989, however, support for more funding is about the same for identifiers of both parties. This finding suggests that large majorities of Democratic *and* Republican voters now consider environmental problems to be very serious and endorse increased federal action to resolve them.[7]

Perhaps a more direct way to address the relationship between partisanship and environmentalism is to examine which party partisans feel will do a better job protecting the environment. Respondents were asked to make such an assessment in the 1990 Center for Political Studies (CPS) National Election Study, and their responses are analyzed here.[8] Table 6.5 shows the relationship between party identification and which party people think is better able to handle environmental problems. As the data reveal, there is a moderate association between partisanship and position on which party can best protect the environment (gamma = .41). Generally speaking, as people's strength of party identification increases, so does the likelihood that respondents will believe that their party will do a superior job controlling pollution. Admittedly, while 54 percent of strong Democrats feel that their party can better handle environmental problems, most members of the other groups feel there is no difference in party performance on this issue.

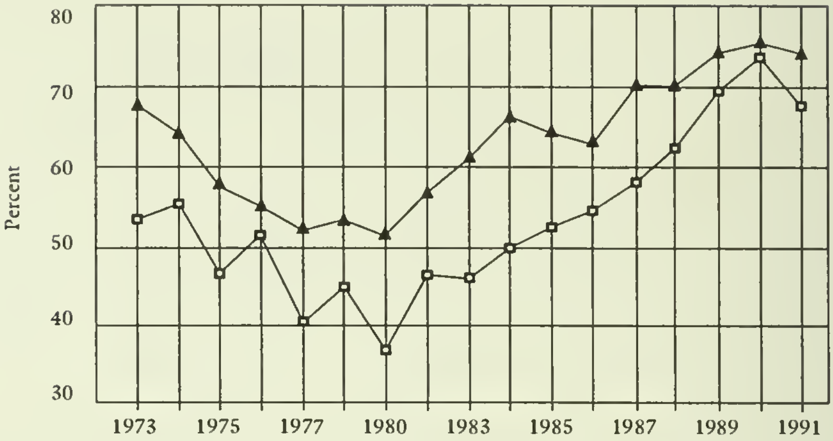

Figure 6.1 Percentage Who Support Increased Federal Spending for Environmental Protection, by Party, 1973–1991. Source: NORC General Social Survey, 1973–91, as reported in Gluck 1993. ▲ Democrats ◘ Republicans.

What is particularly intriguing about table 6.5 is that far higher percentages of Republicans than Democrats think that the *other* party is better able to preserve environmental quality. In fact, a larger percentage of independent-leaning Republicans and weak Republicans think that the Democratic party is better equipped to protect the environment than their *own* party. Evidently, many Republicans are displeased with the way in which their party has addressed environmental problems up to now.

Of course, this still leaves open the question of whether political ideology actually underlies people's positions on environmental issues. Table 6.6 attempts to answer this question by showing the relationships that exist among ideology, partisanship, and different measures of support for environmental protection in 1990. Except for which party citizens think is better able to protect the environment, the correlations between ideology, partisanship, and the various measures of environmentalism are weak. While ideology appears to be more closely associated than partisanship with opinions on forcing companies to obey environmental laws even if it puts them out of business and the need to increase taxes to control air and water pollution, partisanship is more closely related than ideology to evaluations of Bush's handling of environmental problems and which party is better able to preserve environmental quality. The bivariate correlations involving the two items that are most closely associated with party identification do not significantly vary when ideology is held constant. Overall, in fact, controlling for ideology has little or no impact on the bivariate relationships between party orientation and the different measures of envi-

Table 6.5 Party Identification and Positions on Which Party Can Better Protect the Environment, 1990

	Party Identification						
Position	Strong Dem.	Weak Dem.	Ind. Dem.	Ind.	Ind. Rep.	Weak Rep.	Strong Rep.
Democratic Party	54%	37%	42%	12%	22%	27%	13%
No Difference	42	57	53	83	64	59	52
Republican Party	4	6	6	5	15	15	35
Totals	100% (371)	100% (360)	101% (229)	100% (163)	101% (214)	101% (273)	100% (183)

SOURCE: Center for Political Studies (1990).

Table 6.6 Party Identification, Political Ideology, and Positions on Environmental Issues, 1990

Environmental Issue	Political Ideology Alone	Party Identification Alone	Controlling for Political Ideology
President Bush's handling of environmental problems	−.18	−.28	−.26
Environmentalists—feeling thermometer	−.22	−.14	−.05
Forcing companies to comply with regulations even if they must go out of business	−.17	−.06	−.00
Federal spending on environmental protection	−.24	−.16	−.10
Increasing taxes to clean up nation's air and water	−.26	−.13	−.04
Which party is better able to protect the environment	.30	.41	.35

The coefficients reported in the table are zero-order and first-order gammas.
SOURCE: Center for Political Studies (1990).

ronmentalism. In summary, these findings indicate that partisanship does influence environmentalism to a certain degree, and that ideology is not generally behind the relationship between party and support for environmental protection in the electorate.

Discussion and Conclusion

This study analyzed the relationship between party and environmental policy. Using Beck and Sorauf's (1992) framework, it examined party as an organization, party in government, and party in the electorate. Although Engelbert (1961) and I reported substantial differences between Republican and Democratic party platform pledges on environmental issues over a long period of time, I found that the 1992 Republican platform demonstrated a new sensitivity to environmental protection. This mirrors a similar shift among Republicans in the electorate beginning in the 1980s. Wide cleavages still exist, however, between Republican and Democratic members of Congress and state legislatures. Except for southern state legislatures, where voting patterns are similar for legislators from both parties, this finding is in line with previous research (Dunlap and Gale, 1974; Ritt and Ostheimer, 1974; Dunlap and Allen, 1976; Lester, 1980; Kenski and Kenski, 1981; Calvert, 1979; 1989). Still, for two of the three components of American parties, a consensus on environmental controversies appears to be emerging as Ogden (1971) and Edmunds and Letey (1973) predicted. These results may be a preliminary indication that environmentalism is indeed becoming a new ideology in American politics (Paehlke, 1989).

A mystery remains as to why Republican and Democratic party followers show convergence on environmental policy issues while Republicans continue to oppose pollution control measures in the Congress and state legislatures. One possible explanation is that Republican representatives are simply unaware of the new positions of their followers (and the rest of the public) on natural resource policies. Another and probably more compelling explanation, however, is that environmental issues have not achieved a high level of saliency in most congressional and state races. At the same time, Republicans more than Democrats depend upon the continued financial backing of large corporations and polluting firms in their election campaigns. As a consequence, wealthy polluting industries are able to wield considerable influence over how Republicans vote in Congress and state legislatures. Democrats, in contrast, are strongly supported by environmental organizations because of their continued leadership role in this issue area.[9] Future researchers may wish to explore this question more fully.

Finally, it appears that ideology and party are associated with environmentalism among citizens, and that ideology does not cancel out the relationship between partisanship and environmentalism. Still, the bivariate relationships between the three variables tend to be weak in general, partly because so many citizens, regardless of their ideology or party affiliation, agree on the need for increased environmental protection. Unless economic and political conditions dramatically change, there is a good chance that attitudes on major environmental issues held by Republican and Democratic party followers will continue to converge. If elected representatives from the two parties ignore public demand to curtail pollution and fail to preserve environmental quality, however, one might expect a shift of voter support to the Green Party USA. After all, this has already happened in a number of advanced industrialized nations. Yet, legal and institutional barriers not present in other countries, such as winner-take-all elections, represent serious impediments to the electoral success of the Green Party USA. What is most likely to happen is that Republican (and additional Democratic) party legislators will begin to support environmental policy initiatives once they see deep public dissatisfaction surfacing. This is what has generally occurred in the past, and this is what will probably take place in the future.

Notes

The author would like to thank Soo-Ik Chung for his computer analysis of the 1990 National Election Study and Ira D. Gluck for sharing his data from the NORC General Social Surveys Cumulative File, 1973–1991.

1 This directly challenges Kenski and Kenski's (1981) position that political ideology is "causally prior" to party and to environmentalism.

2 Mazmanian and Sabatier (1981), in their study of a small group of California state officials, also find political ideology to be more important than partisanship in explaining positions on environmental issues.

3 Specifically, these data are reported by Kenski and Kenski (1981), Calvert (1989), and the league's (1992) own report. Kenski and Kenski (1981) and Calvert (1989) note potential problems in using ratings by environmental organizations; however, they also believe that such data provide crucial insights into general voting patterns in national and state legislatures. Readers are urged to focus on general tendencies in the data reported in this study and to avoid attaching a very high level of precision to these ratings.

4 The data on the 1990 election were obtained from the Inter-University Consortium for Political and Social Research at the University of Michigan.

5 For a comprehensive examination of ecological parties in individual European nations see Muller-Rommel 1989.

6 One must use caution in analyzing and comparing roll call votes on environmental issues across the states. First, data on roll call votes on environmental legislation are not available for every state. Second, the ratings of individual legislators tend to be based on issues unique to their state and term of office. Finally, not all environmental organizations com-

pute ratings exactly the same way. Nevertheless, data on roll call votes can tell us a great deal about general patterns and influences across the various states and are therefore worth examining.

7 Admittedly, people's attitudes toward federal government spending on environmental protection may not be the best measure of environmentalism. In addition to tapping support for pollution control, such a question also touches upon broader issues concerning government involvement and spending. Many citizens may be in favor of preserving natural resources, but they may prefer alternative approaches over increased government intervention and/or spending additional tax dollars to accomplish the task.

8 Of the 1,818 respondents who answered this question, 56.7 percent said "no difference," 32.8 percent said "the Democratic Party," and only 10.5 percent answered "the Republican Party."

9 This study also collected data on candidate endorsements by state environmental organizations for Congress and state legislatures. As one might expect, Democratic Party candidates were endorsed in far greater numbers for public office than were Republican Party candidates. This led several organizations to emphasize their nonpartisan status in their publications and to wish openly they could support more Republicans for elected office.

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7

Congress and Environmental Policy

Michael E. Kraft

The mid-1990s is an appropriate time to examine the role of Congress in environmental policy. Twenty-five years have passed since the rise of the modern environmental movement and the subsequent enactment of dozens of major environmental protection and natural resource statutes. Congress has appropriated hundreds of billions of dollars to implement those policies, which have variable records of success as measured by achievement of their environmental quality goals. It also has authorized studies of and held innumerable oversight hearings on the full range of environmental programs in the Environmental Protection Agency (EPA) and the Departments of Interior, Agriculture, Energy, and Commerce, among others. Such a congressional track record invites careful appraisal. This is especially so in light of recurrent episodes of environmental gridlock and record low levels of public confidence in Congress and the legislative process.

Students of environmental policy also need to take stock of their cumulative knowledge and identify opportunities for fruitful scholarship as well as applied policy analysis. The scholarly literature has grown and matured significantly since the 1970s, in many ways reflective of changes in political science and policy studies over the past two decades. Twenty years ago reviewers criticized an environmental politics subfield in its infancy for failing to offer the systematic and theoretically informed studies expected in the social sciences (Jones, 1972; Nagel, 1974). By the early 1980s, research in political science, public administration, and policy studies was typically more rigorous; it also addressed important theoretical issues and policy needs slighted in the first generation of scholarship (Mann, 1981; 1982; Ingram and Mann, 1983; Ingram and Godwin, 1985; Vig and Kraft, 1984). This trend has continued into the 1990s (e.g., Vig and Kraft, 1994a).

There is much to be gained by evaluating the contribution made by this research and identifying promising avenues for further inquiry. Such a review might proceed in several ways. One could categorize the literature in terms of the usual subdivisions of American politics (interest groups, Congress, the bureaucracy, the courts, federalism, and so forth), and assess the contributions made in terms of the usual disciplinary expectations. For the most part, this is the orientation of the present volume, an approach, however, that carries some disadvantages. For example, studies of environmental policy-making and implementation often cut across institutional boundaries, with analysis directed at functional activities in the policy process rather than at those within particular institutions. In addition, interdisciplinary environmental studies—including economic and other forms of policy analysis, legal analysis, sociological studies, and technical research—make important contributions, both theoretically and substantively, to our knowledge of how government addresses environmental problems. Yet these works cannot be assessed adequately using disciplinary criteria alone or with a narrow focus on a single institution such as Congress. The purpose of this book is to review and bring some order to political science contributions to the field of environmental politics and policy. Thus, in this chapter I deal chiefly with the disciplinary scholarship focusing on the U.S. Congress and its role in the policy process. The limitations of such an approach should be borne in mind.

Four broad questions guide this enterprise: How can the wide-ranging literature on Congress and environmental politics best be organized to highlight the most significant characteristics of the institution and its actors? What are the most important findings and perspectives offered in this literature over the past twenty-five years? What are the major contributions to theory building, and what major problems have arisen in efforts to describe and explain the congressional role in environmental politics? What are some of the most promising areas for new research? These are imposing questions that can be answered only partially and tentatively.

Congressional Scholarship and Environmental Politics

I begin this review of Congress and environmental policy with a simple assertion. Congress is a political institution that contributes importantly, indeed crucially, to democratic politics. This is true notwithstanding a pervasive and often withering cynicism in the body politic about Congress and its members. In the political climate of the 1990s, the nation may not believe the present membership to be praiseworthy and may not have much trust and confidence in the ability of Congress to deal with imposing national problems. Yet its historical role in the formation of environmental policy has been both highly influential and unquestionably responsive to the American public's concern over environmental degradation (Davies and Davies, 1975; Jones, 1975; Kraft and Vig, 1994). If Congress falls short of expectations for environmental policy making in this last decade of the twentieth century, we should try to understand why it operates the way it does, develop appropriate standards of evaluation, and seek ways to improve its performance.

I offer a second simple assertion. The study of Congress and environmental policy cannot and should not be entirely separated from the more general study of Congress and public policy. There has been relatively little systematic research on environmental politics within Congress, yet there is a large and sophisticated body of scholarship dealing with the institutional structure of Congress, congressional behavior, and policymaking processes. That broader literature provides a strong foundation on which to build studies of the distinctive issues of environmental politics and policy. Thus perusal of review essays on Congress and the legislative process (e.g., Peabody, 1981; Rieselbach, 1983; Mezey, 1993) should bring measurable dividends to students of environmental politics.

Two points of caution must be made, however. The first is that even after several decades of increasingly systematic congressional scholarship, one of the leading scholars stated that "no single theoretical viewpoint has yet emerged" (Peabody, 1981). After another ten years, one still sees a great diversity of conceptual frameworks employed, from institutional analysis to rational choice theory. The eclectic nature of congressional scholarship makes the task of cumulating knowledge and building theory both difficult and of limited value.

The second warning is that the literature on Congress has been notably deficient in relating internal structures and decision-making processes to policy outputs. With the growth of policy studies since 1970, this oversight has been corrected to some extent. For example, Ripley and Franklin (1991) extend the familiar typology developed by Theodore Lowi to identify congressional-executive relations in four policy areas (distributive, protective/regulatory, redistributive, and foreign/defense). Much natural resource policy is distributive and most environmental protection policy is regulatory, suggesting the value of these distinctions in patterns of policy making. Despite some improvement, however, most research on Congress continues to give only marginal attention to the policy implications of congressional politics.

To survey the pertinent literature on Congress and environmental policy, I use a fairly conventional organizational framework. Such an approach facilitates a broad review of the institution and imposes the least restrictive boundaries on what constitutes significant or legitimate research. I consider selective congressional and environmental politics scholarship in three broad categories: membership characteristics and behavior, institutional structure, and policy-making processes. Within each I ask about contribution to theory building, methodological issues, and promising topics for further research. A concluding section on congressional performance and environmental policy considers critical evaluations of the congressional role and institutional reform. Given the purpose of this review, I refer to particular environmental policies only to illustrate patterns of congressional behavior.

Membership Characteristics and Behavior

Congress has changed in several important respects since the early 1970s (Davidson and Oleszek, 1990; Davidson, 1992). One of the most notable developments has been in the members of Congress and their behavior: the individuals attracted to a congressional career, their policy preferences and political goals, their willingness to challenge the established norms of behavior, their use of the powers of incumbency to solidify their standing with constituents and achieve substantial political independence, their sources of funding for reelection contests, their use of media and staff, and their behavior on matters of public policy—from actions intended to shape the congressional agenda to oversight of policy implementation. These changes have significant implications for the way members respond to environmental policy issues.

Congressional scholars have proposed several modest theoretical frameworks for understanding member behavior. Three of the most important in recent years postulate purposive behavior or rational choice. Members are assumed to be rational actors seeking individual goals. For David Mayhew (1974), members of Congress are "single-minded seekers of reelection" who engage primarily in the three activities likely to enhance their prospects of reelection: (1) personal publicity or advertising (promoting their name recognition); (2) credit claiming (taking credit for legislative developments, especially for benefits that accrue to the district); and (3) position taking (taking positions on the issues in speeches and votes, as distinct from engaging in more demanding actions in policy formation and oversight).

R. Douglas Arnold (1990) also puts the "electoral quest" at center stage, but he argues that it can "impel legislators to support policies that serve either particularistic or general interests," depending on the extent of citizen vigilance and the visibility of congressional votes (p. 6). He sees more potential than does Mayhew for citizen policy preferences to affect member performance. Finally, Richard Fenno (1973) broadens the range of member goals by including not only reelection, but the achievement of influence among peers within Congress and the making of "good public policy" as members define it.

Theoretical frameworks such as these suggest certain patterns of congressional action on environmental policy that can be tested against the historical record and contemporary legislative behavior. For example, when environmental issues are highly salient for constituents, as they were in the early 1970s and for a time during the controversy over Anne Burford's handling of the EPA's toxic waste programs in 1983, incentives exist for members to pay attention to the issues, participate in agenda building and policy formulation, and engage in oversight of administrative actions. However, such theories do not explain very well the policy entrepreneurship in the 1960s and 1970s of environmental leaders such as Henry Jackson, Edmund Muskie, Gaylord Nelson, Paul Rogers, John Saylor, Morris Udall, John Blatnik, and John Dingell. Nor do they explain why some (albeit few) members devote themselves to issues such as global climate change and population growth when there is little apparent political incentive to do so. What factors motivate members to concentrate on environmental policy issues and what incentives shape their choice of legislative activities?

One of the major lines of congressional scholarship has been to differentiate members not only by personal or demographic characteristics (e.g., education, age, occupational background, experience) but by legislative roles adopted, the nature of the constituency represented, electoral vulnerability (marginal versus safe districts), and seniority. Most commentary on congressional behavior and the environment ignores such variance among the membership and thus has been relatively insensitive to variables that often are important in determining member interest and actions. The insightful research by Fenno (1978) on members' "home style" and the innovative study by Kingdon (1989) of congressional voting behavior suggest the value of a fuller exploration.

In one early study of my own, based on focused interviews in 1970 with the membership of five House subcommittees (Kraft, 1973), member attitudes toward environmental issues and their degree of involvement in environmental policy were shown to be related chiefly to the nature of the district represented and to personal characteristics. Those in the sample for whom environmental issues were most salient and those whose conceptualization of the issues could be described as "ecological" tended to represent environmentally attractive or threatened areas of the nation, and to have had a long-standing personal concern for the environment. They were also found to come more often from urban than rural districts, to be more liberal, oriented more to national than district interests, and more concerned with the legislative aspects of their jobs than others in the sample. Relationships between demographic attributes (age, education, prior occupation) and the member's interest in environmental issues proved to be weak or nonexistent. Factors such as seniority, perceived constituency interest, and electoral vulnerability were also related to agenda-setting activity (e.g., the number and variety of bills introduced and the number and kind of speeches made on environmental issues), although in general these relationships also were weak. There is some reason to believe that electoral security and seniority may be important variables affecting member willingness to devote substantial time and resources to environmental issues that are of little interest to a mass constituency.

A fuller understanding of such relationships may be especially pertinent if one is seeking to describe the conditions for congressional leadership on long-term ecological problems. The more general scholarship on policy entrepreneurship and policy innovation would be a good place to begin for insightful propositions and methodological guidance (Kingdon, 1984).

The dominant form of empirical work on congressional behavior and the environment has been roll call analysis. Much of this research is covered in Kamieniecki's chapter, and I will discuss the subject here only briefly. Early studies by Dunlap and Allen (1976), Ritt and Ostheimer (1974), and Kenski and Kenski (1981) confirm propositions commonly found in the congressional literature. They find that voting on environmental quality is related to party affiliation, ideology, region, and constituency characteristics. Proenvironmental voting, as judged by the League of Conservation Voters (LCV) scores, for example, is more likely among liberals, Democrats, and members from urban and suburban districts and districts in the East than among conservatives, Republicans, and members from rural districts and the South. In both the House and the Senate, ideology appears to be the most important factor (Kenski and Kenski, 1984). However, roll call studies have not been consistent in methodology, and hence the findings are not always comparable. LCV scores are commonly used as a measure of proenvironmental voting, but like other organizational scorecards, they may conceal several issue dimensions and may not differentiate as much as desirable between qualitatively different votes (e.g., their policy significance).

Studies of energy policy voting yield similar conclusions, with ideology and party emerging as the best predictors of the vote (Bernstein and Horn, 1981; Riddlesperger and King, 1982). However, energy issues involve a large number of cross-cutting cleavages—regional, partisan, ideological, and constituency—and once again the studies do not adequately isolate the issue dimensions and sort out the effect of such variables.

Constituency influence on legislative voting is exceedingly difficult to measure even when one seeks only to show a correspondence between constituency policy preferences and member voting. Perhaps the most elaborate and methodologically interesting study is that of Ingram, Laney, and McCain (1980; see also Laney and Ingram, 1981), which focuses on state-level representation of constituency views on environmental and energy issues in four southwestern states in 1975. They find that legislators have great difficulty representing their constituencies in part because of disparate and conflicting attitudes among voters. Thus if representation is taken to mean "the ability to construe voters' wishes and act in a manner responsive to them," there are major obstacles to developing comprehensive policies that are designed to resolve conflicts between environmental protection and energy development. Laney and Ingram suggest that legislators have little incentive to risk provoking special interests and the public at large by making such explicit policy choices.

One particular aspect of representation in Congress concerns the influence of environmentalists within the district. Here the evidence is mixed. Kau and Rubin (1979) report a moderate statistical relationship between the number of Sierra Club members in a state and roll call votes in the House. But Fowler and Shaiko (1983), using a database generated by Robert Mitchell on the opinions of environmentalists in the states, conclude that proenvironmental opinion has little impact on Senate roll call voting. Of greater importance is their conclusion that a broader perspective than that afforded by roll call analysis is needed to test the validity of propositions on the impact of environmental groups on congressional decision making. In short, roll call analysis has helped to confirm some relationships, but it is necessarily limited by its focus on floor voting as the sole measure of congressional policy activity and by the narrowness of the propositions that can be tested by comparing member characteristics and voting behavior.

The better work on congressional voting patterns (e.g., Kingdon, 1989) relies on interviews with members and offers a more sophisticated theoretical framework than typically found in studies of environmental voting. Kingdon asked members, "How did you go about making up your mind?" He was able to rank order the factors determining House voting on some of the major votes at that time (1969) as well as to explore probable causal mechanisms in some detail. In general, the order is fellow members of Congress, the constituency, interest groups, the administration, and party leadership, with personal reading and staff in close competition as the least important factors. Given the changes in the membership and operation of Congress since the late 1960s, one might expect to see some shifts in that order today. The more important point is that roll call studies of environmental voting in Congress have been far too limited to answer the most interesting questions about member behavior.

Constituency opinion is clearly an important variable affecting member voting, as are perceptions of the electoral environment. The general literature on congressional elections tells us that the electoral process itself is equally important and can significantly influence members' calculations about public preferences on policy issues and the salience of those issues (Jacobson, 1992; Arnold, 1990). Two chapters in this volume (those by Ingram, Colnic, and Mann and by Dunlap) discuss the role of environmental groups and public opinion in congressional elections. However, there is a paucity of systematic research on the subject. Such an omission is striking in light of the increasingly active role played by environmental groups in elections in the 1980s and early 1990s. Over the past decade, environmentalists have formed new political action committees and funneled significant sums of money into congressional campaigns. Seemingly, the "green vote" is a force to be reckoned with, yet the evidence is mixed. In a number of congressional contests, environmental issues have been among the most important, especially when they are highly salient within the state or district and when local environmental groups focus their efforts on certain contests. However, as in presidential campaigns, the environment has yet to become a determinative issue in most congressional elections, and surveys indicate that voters show little inclination to change their vote based on a candidate's environmental policy positions (Dunlap, 1987; Vig, 1994:87–88).

Aside from anecdotal material and postelection reports by environmental groups, we have little evidence on the extent of involvement of environmentalists in congressional elections, the impact they have had on campaigns and the issues raised, and the subsequent effect, if any, on both voter behavior and congressional decision making. What might be said of these relationships? Are they much the same as or different from what is found for other groups, including public interest groups (Schlozman and Tierney, 1986; Bosso, 1994)? Some unique characteristics of environmental issues must be considered in evaluating the role and impact of environmental and conservation groups on Congress. For example, there is considerable evidence that the salience of the issues and public knowledge of environmental problems are fairly low despite generally positive public attitudes toward environmental protection policies (see Dunlap's chapter). What difference do these characteristics make for congressional response to public concern for the environment? Does it increase the likelihood of symbolic actions intended to satisfy the general public while particularistic benefits are given to more organized groups, including industry?

Another line of inquiry would ask about the quality of representation of the constituency. Borrowing from Fenno's (1978) illuminating study of House members in their districts, we might ask how members present themselves back in the district or state. How accurately do they perceive constituency opinion on environmental issues? What relationship do they have with state and local environmental organizations? In what ways, both symbolically and substantively, do they attempt to represent district views? While a comprehensive study of such questions would be difficult, carefully selected case studies might shed light on the subtleties of congressional representation.

Congressional Structure and Environmental Politics

Congressional action on environmental issues cannot be understood without an appreciation of the impact of institutional structure. As is the case with member characteristics and behavior, institutional arrangements within Congress have undergone significant changes in the last two decades. Some earlier observations must be revised in light of changes in the structure and the distribution of power in Congress. Given the limited work focusing on environmental politics and policy issues, I make considerable use once again of the more general literature on Congress to illustrate how broader theoretical frameworks and findings might inform the study of environmental politics. The particular features meriting comment here include the committee system, committee staffs, informal caucuses and study groups, and professional support offices.

Congressional Committees

Because policy making and oversight of administrative agencies take place almost exclusively within the highly specialized committees and subcommittees of Congress, congressional scholars have long dissected the workings of these bodies. The most prominent scholarship that brings some theoretical coherence to the subject is Fenno's (1973) pioneering comparative committee study, supplemented by the more recent efforts of Smith and Deering (1984) and Price (1985). Fenno argued that committees differ significantly in the nature of their political environments and their members' personal goals, which in turn affect committee politics, operations, and policy outputs. Such an approach proves helpful in distinguishing the various House and Senate committees with jurisdiction over environmental policy.

For example, in their recent review of committees, Smith and Deering applied Fenno's typology of member goals (reelection, power, and policy) and, based upon interviews with members, distinguished prestige committees, policy committees, and constituency committees. In the Senate, environmental committees are overwhelmingly constituency committees; they include the committees on Commerce, Science, and Transportation; Energy and Natural Resources (formerly Interior); Environment and Public Works; and Agriculture, Nutrition, and Forestry. Commerce is described as less policy-oriented than its House counterpart, and the Environment and Public Works Committee less policy-oriented in the 1980s than it was in the early 1970s.

In the House the picture is somewhat mixed, with Energy and Commerce classified as a policy committee, and Natural Resources (formerly Interior and Insular Affairs), Public Works and Transportation, Merchant Marine and Fisheries, and Science, Space and Technology considered to be chiefly constituency committees. With its jurisdiction over air pollution, health, consumer protection, and energy policy issues, Energy and Commerce is especially attractive to policy-oriented members (those interested in salient national issues, even if complex and conflict-ridden). In contrast, the constituency committees are thought to be of greatest interest to those members motivated mainly by constituency-oriented concerns. Such reelection-minded members, it is argued, tend to avoid issues that alienate important segments of the constituency. Instead, they seek to curry favor with constituents by channeling federal funds back to the district, or otherwise providing particularized benefits with widely dispersed costs. As Smith and Deering explain, a committee "with low national salience, high local salience, low conflict, and a narrow jurisdiction is especially attractive to the constituency-oriented member" (1984:86).

While necessarily oversimplifying the diversity and complexity of congressional committee politics, such theoretically informed classification schemes usefully differentiate committees. Thus Murphy's (1974) description (among others) of the Public Works Committee, since reorganized, provides an explanation for its pronounced tendency to favor distributive (pork barrel) policies with particularized benefits. In an entirely different policy area, the failure of Congress to address population policy issues during the 1970s, other than in the short-lived Select Committee on Population in the House from 1977 to 1978, is explained in part by the absence of a committee with jurisdiction in this area and insufficient incentives to pursue such low-salience and (sometimes) high-conflict issues. The one committee that held hearings on national population policy in the 1980s was the Subcommittee on Census and Population of the House Post Office and Civil Service Committee, a committee categorized by Smith and Deering as "undesired." It did so only after intense pressure by population groups forced consideration of the measures (Kraft, 1983).

Fenno's observation that committee decisions reflect member goals also tells us that changes in membership may profoundly affect policy choices. Karen McCurdy (1993), for example, studied changes in the membership between 1955 and 1986 of what is now the House Natural Resources Committee, and showed that the "greening" of the committee was attributable largely to an influx of new members. Eventually such changes affect the selection of committee and subcommittee chairs and their behavior. In fact, one can see significant change in that particular committee's style and decisions from Wayne Aspinall's leadership in the 1960s and early 1970s to that of Morris Udall in the 1970s and 1980s and of George Miller in the 1990s (Kuntz, 1991).

The Vices and Virtues of Dispersed Power

If one common theme has been that committees differ and that such differences are to be explained mainly in terms of member goals and the political environment of the committee, another has been the observation that the congressional committee system is the embodiment of structural fragmentation and dispersal of influence in American government. That conclusion is based on several characteristics. One is the sheer number of committees and subcommittees: twenty-two standing committees and about a hundred and fifty subcommittees in the House and sixteen standing committees and about ninety subcommittees in the Senate. As indicated in table 7.1, another is the overlapping jurisdiction of committees, as evident in the case of environmental policy as in other policy areas. Responsibilities for the major environmental statutes illustrated here are not concentrated in one or two committees but are divided among seven in the House and five in the Senate. In many cases, jurisdiction over individual statutes is also divided, inviting turf battles and policy gridlock. Fourteen committees and twenty subcommittees in the Senate and eighteen committees and thirty-

Table 7.1 Committee Jurisdiction over Selected Environmental Statutes

Statute	House Committee	Senate Committee
Appropriations for All Agencies	Appropriations	Appropriations
Clean Air Act	Energy and Commerce	Environment and Public Works
Clean Water Act	Public Works and Transportation	Environment and Public Works
Endangered Species Act	Merchant Marine and Fisheries	Environment and Public Works
Federal Insecticide, Fungicide, and Rodenticide Act	Agriculture	Agriculture, Nutrition and Forestry
National Environmental Policy Act	Merchant Marine and Fisheries	Environment and Public Works
Nuclear Waste Policy Act	Energy and Commerce; Science, Space and Technology; Natural Resources	Environment and Public Works; Energy and Natural Resources
Safe Drinking Water Act	Energy and Commerce	Environment and Public Works
Comprehensive Environmental Response, Compensation and Liability Act (Superfund)	Energy and Commerce	Environment and Public Works
Surface Mining Control and Reclamation Act	Natural Resources	Energy and Natural Resources
Toxic Substances Control Act	Energy and Commerce	Environment and Public Works; Commerce, Science, and Transportation
Federal Land Policy and Management Act	Natural Resources	Energy and Natural Resources
Wilderness Act	Natural Resources	Energy and Natural Resources
Resource Conservation and Recovery Act/ Solid Waste Disposal Act	Energy and Commerce	Environment and Public Works

SOURCE: Compiled by the author. As this book was going to press, the House revised its committee structure, renaming some committees, eliminating others, and altering jurisdictions. The table reflects committee titles and jurisdictions effective through 1994.

eight subcommittees in the House have some jurisdiction over EPA. By one calculation, in 1976 there were twenty-three committees and fifty-one subcommittees in the Congress that dealt with some aspect of energy policy (Jones, 1984:105).

Some of the consequences of divided jurisdiction are illustrated by the protracted congressional effort, especially in 1981 and 1982, to design federal policy for high-level nuclear waste disposal. Three House committees have primary jurisdiction over nuclear waste legislation, and another four have some influence. Three committees in the Senate also were deeply involved in negotiations over what eventually became the Nuclear Waste Policy Act of 1982. Although a fragile compromise was approved, Congress was forced to consider major repairs in 1987 after the Department of Energy encountered massive public resistance to its waste repository siting program. The 1987 amendments were not much more successful than the original act. Conceivably, a more coherent committee system might have allowed Congress to anticipate public reaction more accurately and design a more effective policy. A different kind of policy leadership on the Senate Energy and Natural Resources Committee also might have given greater consideration to policy legitimation needs and to available means for correcting program weaknesses (Kraft, 1992).

More generally, the consequences of such jurisdictional complexity include delay in addressing policy needs, piecemeal consideration of related policies handled by different committees, and inconsistencies and lack of coherence in the nation's environmental policy. As Dean Mann (1981) has noted, environmental policy in the United States is "rather a jerry-built structure in which innumerable individuals, private groups, bureaucrats, politicians, agencies, courts, political parties, and circumstances have laid down the planks, hammered the nails, plastered over the cracks, made sometimes unsightly additions and deletions, and generally defied "holistic" or "ecological" principles of policy design" (4). The fragmentation of policy formulation in Congress that results in part from the committee system is a major factor creating such a state of affairs. Not surprisingly, scholars often complain about some of the effects of the lack of policy coherence—from inconsistent standards for regulating environmental risks to continued emphasis in pollution control on single media rather than cross-media approaches (Vig and Kraft, 1994b).

As might be expected, numerous analyses of environmental issues in Congress have addressed the fragmentation question, with most reaching similar conclusions. Kenski and Kenski (1984:110) take special note of overlapping committee jurisdiction for a broad range of environmental issues, as have Jones (1979), Oppenheimer (1980), and Katz (1984:esp. chap. 12) for energy issues. Barry Rabe (1990) argues convincingly that legislative fragmentation is responsible for many of the shortcomings in the Superfund program (e.g., statutory inconsistencies, lack of priority setting, and overestimates of the technical and administrative capacity of the EPA to implement the program). I have called attention to the same phenomenon in population policy (Kraft, 1983:635). The argument has been that such institutional fragmentation makes difficult the formulation and adoption of comprehensive and integrated national policies dealing with various aspects of environmental quality. The centralizing influence of party leaders and the president are often insufficient to overcome this constraint. With the further decentralization brought about by the evolution of "subcommittee government" in the 1970s, one might imagine the situation has become far worse than in previous decades.

There is, however, a competing interpretation of the dispersion of power in Congress. As noted by Davidson (1981), Kingdon (1984), and, in a slightly different context, Ingram and Ullery (1980), decentralization and institutional pluralism allow for greater policy entrepreneurship by individuals who might otherwise not be in a position to shape agenda setting or policy formulation. A related argument is that decentralization requires greater effort to build majority coalitions and thus helps to promote the legitimacy of environmental policy. As Kenski and Kenski (1984) note, fragmentation may constrain Congress in its policy initiation and partnership roles, but it could be seen as an opportunity in its defender-of-the-status-quo and overseer roles, where individual members are given a forum to challenge those promoting policy change with which they disagree. During the 1980s, with Congress thrown into a defensive posture against the Reagan administration's attempts to weaken environmental policy, one found more positive evaluations of the institution.

These contrasting interpretations of the political effects of dispersed power in Congress suggest the need to sort out conflicting propositions and create some order in our understanding of the impact of congressional structure on environmental policy making. For example, to what extent does structural fragmentation contribute to environmental gridlock (Kraft, 1994a), and under what conditions and in what other ways does fragmentation affect policy making? What effects would result from committee reorganization, centralization of leadership, or similar reforms?

Committee Staffs, Study Groups, and Technical Support Agencies

The role and impact of committee staffs (there are some three thousand of them in Congress), especially on technical issues, is another area in which little research has been conducted. Several general treatments of committee staff have appeared (Fox and Hammond, 1977; Malbin 1980), but we know little about how they collect and use technical information on environmental quality issues, the way in which they define policy alternatives, the use they make of policy analyses, and their impact on committee decision making. Comparative committee studies could illuminate the various roles played by staffs and the conditions for effective use of technical information and policy analyses.

Similarly, there are few studies of the activities and impact of the various caucuses, party policy committees, and study groups that have proliferated on the Hill in the last two decades. Some of the environmental caucuses and study groups date back to the early 1970s (e.g., the Environmental and Energy Study Conference), while others are of more recent origin. The gap in general scholarship on groups is slowly being filled (Loomis, 1981; Hammond, 1989), but this literature deals with environmental groups only indirectly or for illustrative purposes. For example, Hammond, Mulhollan, and Stevens (1985) analyze how informal caucuses, including the Environmental and Energy Study Conference, shape agenda setting. They conclude that the larger "personal interest" caucuses such as the conference serve chiefly an informational or educational, rather than advocacy, function; they were formed largely to help set the congressional agenda, not to further specific policy goals. The conference, with 90 senators and 290 representatives as members in 1991, issues reports and an annual briefing book on environmental and energy legislation before Congress that allow it to define the policy issues and thus influence the direction of congressional action.

It would be useful to know more about the contribution made by these informal groups (and the various party groups and caucuses) to environmental policy deliberation. Do they significantly increase Congress's capacity to formulate environmental policy or oversee executive agencies by providing crucial technical information or mobilizing important constituencies? Do they play a major role in promoting policy innovation or change, or in building advocacy coalitions on specific environmental battles? If so, in what way? If they promote representation of environmental interests by building ties to the multitude of environmental organizations that have opened Washington offices in the last twenty years, how successful have they been at doing so? Although most of the caucuses and study groups are fairly small and operate with modest budgets, their distinctive role in Congress deserves more attention than has been received to date.

Similarly, we should give more consideration to the analytical offices that support environmental policy activities on the Hill. The complexity of environmental policy, from global climate change and clean air legislation to protection of biological diversity, demands sophisticated scientific and technical assessments. Despite an impression to the contrary among the populace, Congress is well equipped to provide such knowledge to members. The key question is how well members (and their personal and committee staffs) make use of this kind of policy analysis. The General Accounting Office (GAO), the Office of Technology Assessment (OTA), the Congressional Research Service (CRS), and the Congressional Budget Office (CBO) figure prominently in some case studies of environmental policy making. Yet there are few general descriptions of their operation and impact.

Gibbons and Gwin (1985) provide a useful review of OTA's creation, congressional expectations for the kinds of technology assessment that it produces, and how its assessment process works—including the relationship between OTA staff and pertinent bodies both within and outside of Congress. By far the most thorough and insightful studies of policy analysis in Congress, however, rely on case studies of policy making, which is perhaps the best way to understand the complex relationships involved. Gary Bryner (1992) concluded that one set of such case studies that he edited showed a great variety of analyses of scientific and technological issues prepared by the congressional support agencies, and by others, that were made available to members and their staffs. The challenge confronting policymakers, he noted, "was clearly not a lack of information." Rather, it was more complex and included conflicting values, uncertainty, and the kind of information needed by members—concise, timely, trustworthy, related to specific policy alternatives, and economically and politically realistic (Bryner, 1992:229). Unfortunately, the technical information provided by support agencies and outside advisers often fails to meet such expectations.

To judge from the voluminous publications they produce on technical issues in environmental policy design, budgetary proposals, and policy implementation, these offices would seem to be a major influence on environmental policy making in Congress. Yet a careful study of the impact of OTA's work on congressional committees indicates a more modest influence. David Whiteman (1985) studied the use by congressional committees of five OTA projects, several of which involved environmental and energy concerns. Through some fifty-nine interviews with OTA and committee staff as well as review of the documentary record, he found that *strategic* use of OTA policy analysis was the most common. This is "where analytic information is used in a supportive capacity to reinforce and advocate existing positions." It should be noted, however, that Whiteman also found evidence of *substantive* use (where no previous policy commitment had been made) as well as of *elaborative* use (extension and refinement of established policy positions). Conceptualizing and measuring utilization of knowledge in environmental policy making is a challenging enterprise (Kraft, 1995). For that reason, Whiteman's well-developed conceptual framework for studying the use of technical information in committee decision making might help guide other efforts to assess the role and impact of analytical offices on the Hill as well as to address the broader question of how knowledge affects congressional decision making on environmental and resource issues.

Congressional Policy Making and the Environment

Descriptions of congressional functions or roles typically divide the work of Congress into five categories: representation, constituency service, policy making, oversight, and public education (Vogler, 1993). Although activities within each may affect public policy directly or indirectly, the legislative and oversight functions are especially noteworthy for present purposes. In particular, students of environmental politics are interested in the political processes affecting agenda setting, policy formulation, policy legitimation, budgeting, and evaluation of policy impact in a wide range of policy areas, from pollution control to natural resources management.

Case Studies of Environmental Policy Making: The Need for Theory

Most of the early studies of environmental policy making in Congress dealt with specific policies and were largely descriptive narratives of policy formation. Such work is part of a long-standing tradition of congressional scholarship: case studies. For example, Jennings (1969) examined policy making for water pollution control policies, Ripley (1969) for air pollution control, and Cooley and Wandesforde-Smith for natural resources and conservation (1970). In the same vein, Katz (1984) and Sanders (1981) have provided detailed accounts of energy policies. In these examples, the focus of attention has been on how policies were shaped by individual legislators, committee staffs, and interest groups, and how the larger political climate of the time affected the outcome. Many such studies go well beyond Congress and deal with the influence of the president, the bureaucracy, and a variety of other external actors. Some, such as Goodwin's (1981) collection on energy policy and Sundquist's (1968) review of policy in the Eisenhower, Kennedy, and Johnson administrations offer primarily historical perspectives on policy development.

In recent years, environmental policy has been a focus of several book-length treatments by both journalists and political scientists who offer insightful accounts of congressional decision making. In one of the best, Richard Cohen (1992) traces the decade-long incubation and adoption of the Clean Air Act Amendments of 1990, with particular attention given to the crucial role of policy leadership. Based on interviews with key participants, Cohen emphasizes the necessity of negotiation "behind closed doors" to resolve the deep political conflicts that otherwise prevent compromise in open sessions. Gary Bryner (1993) extends Cohen's treatment of the Clean Air Act by offering far more detail on the provisions of the act and the scientific and technical controversies that Congress dealt with—such as the uncertainties of risk assessments and demands for greater use of cost-benefit analysis. He also suggests the necessity of using multiple criteria (e.g., policy outcomes and political process concerns) to assess congressional performance in environmental policy making.

In a quite different policy area, Richard Tobin (1990) examines congressional formulation (and administrative implementation) of biological diversity policy. He traces the politics of the Endangered Species Act (ESA) from its adoption in 1973 through amendments in 1978, 1982, and 1988. Tobin suggests the inherent weaknesses of environmental policy making when neither the public nor policymakers understand the technical issues, when well-organized groups (e.g., development interests) mount vigorous lobbying campaigns to weaken the statute, and when insufficient funds are provided to implementing agencies. Yet battles over the ESA also indicate that once enacted, major environmental statutes can rarely be repealed outright—or even weakened significantly. Rather, they are continually revised at the margins. Such incremental changes maintain the symbolic value of environmental protection while also meeting the objections of critics.

While most case studies are stronger on description than analysis, they illustrate the role that Congress has played over several decades in environmental policy formation. Some hint at the influence of congressional structure, political incentives, and policy leadership in a way that may facilitate theory building, and others (e.g., Bosso, 1987, discussed below) are more explicit in their use of theory. Nevertheless, the most important contribution of case studies may lie in the rich history of policy development they provide. This is also true of the best journalistic accounts of legislative policy making (e.g., Congressional Quarterly's *Weekly Report,* its annual almanacs, and its *Congress and the Nation* series).

The more analytical studies of environmental policy making suggest the utility of one or more theoretical frameworks. One of the most influential studies of this kind is Charles Jones's account of the formation of air pollution control policy, *Clean Air* (1975). Jones's coverage of the formation and implementation of air quality policy is notable for its careful assessment of the congressional role in the larger policy process. He highlighted the incentives for congressional action, noting the eagerness Congress displayed in 1970 in responding to new public demands for a dramatic "escalation" in clean air policy. But he also found such action wanting. Jones criticized Congress's "speculative augmentation" in air quality policy that created "policy beyond capability." He found more virtuous qualities in incremental decision making.

Two other treatments of the congressional role in air quality, by Ackerman and Hassler (1981) and Lundqvist (1980), similarly demonstrated the value of analytical approaches, including in Lundqvist's case, the promise of cross-national comparison. Lundqvist's conclusions about the proclivity of Congress to ignore technological and economic feasibility and to press for "technology-forcing" approaches with stringent objectives and deadlines parallel Jones's observations in many respects. He argued that the difference between the aggressive U.S. action on pollution and Sweden's "tortoise-like" response is a function of political structure (the weak U.S. party system, decentralized influence in Congress) and the highly individualistic politics of the U.S. Congress.

Political Climate and Policy Cycles

The limitation of both descriptive and analytic case studies is apparent in some of these conclusions, for they reflect the peculiar political environment of the early 1970s that led Congress to favor a number of nonincremental environmental policies despite the usual obstacles to such policy making. Since that time Congress seems to have returned to the more common incremental policy-making patterns or to a politics of stalemate over renewal of the major environmental policies. While one explanation for this deadlock is the sharp disagreement between Congress and the Reagan and Bush administrations over environmental policies, there have also been broader changes in the political system that have affected swings in congressional action.

Assessing congressional policy making in the mid-1980s, Cook and

Davidson (1985) argued that during much of the early 1980s, Congress was practicing "deferral politics." This assessment was widely echoed in editorial comments in the press, for example in the *New York Times* (1984), about environmental protection being "paralyzed in Congress and mired in the courts." "Congress," the *Times* reported, "failed to agree on important revisions of the acts governing clean air, clean water, drinking water and abandoned toxic dump sites."

As the "motherhood" nature of environmental politics in the early 1970s gave way to more sharply conflictual politics by the 1980s, Congress did indeed find itself unable to resolve major differences between environmentalists and their opponents, with both sides well represented in Washington. In the new political climate, where environmental policies became low-salience (at least most of the time) and high-conflict issues, not only were there fewer incentives for policy leadership, but members were increasingly cross-pressured and gridlocked (Kraft, 1994a). The Ninety-eighth Congress (1983–84) was not very successful in resolving conflicts over most of the major environmental statutes, though the Ninety-ninth Congress (1985–86) was strikingly different. The change reflected public rejection of the Reagan administration's efforts to weaken environmental policy (Dunlap, 1987).

The shifting fortunes of environmental policy in the 1980s suggest the importance of political climate and its impact on member perceptions. One notable change has been the increased complexity of environmental problems—and the scientific uncertainties over their scope, causes, and implications. Another has been concern over the rising costs of improved environmental quality. In 1993 such costs were estimated to be about $140 billion a year (public and private expenditures included) or about 2 percent of the gross national product, a figure expected to rise to 2.5 percent by the mid-1990s. Given the political incentives for members, demonstrating the worth of environmental policy with high short-term costs and uncertain long-term benefits (e.g., climate change mitigation policies such as a carbon tax) is not easy. A third development has been the increased capacity of business groups to challenge environmentalists on economic costs and other grounds.

During the Reagan administration, these forces combined with White House opposition to limit congressional enthusiasm for environmental protection. Yet public concern over the environment and support for strong policies continued, and the salience of environmental issues reached new heights in the late 1980s (Mitchell, 1990). By the 1988 presidential campaign, George Bush found it politically useful to endorse environmental policy, and the changed climate was a major factor in Bush's support for renewal of the Clean Air Act in 1990. By 1992, in the midst of a recession, Bush sounded more like Reagan as he criticized "environmental extremists" on issues ranging from global climate change and the U.S. position at the 1992 Earth Summit to protection of the northern spotted owl in the Pacific Northwest (Vig, 1994).

These changes in political climate are a reminder that public policy follows a cycle that is affected by a range of variables. Norman Vig and I have argued that environmental policy is a product of deep currents of social and economic change supportive of strong environmental protection as well as of shallow currents—short-term political and economic forces, such as presidential elections and business cycles, which may alter the saliency of environmental issues and the feasibility of particular policy proposals. These developments may either reinforce the long-term trends in society supportive of environmental protection or temporarily weaken them (Kraft and Vig, 1994). However one formulates a policy cycle theory, one implication is clear: we need to recognize and account for variance over time in congressional action on the environment.

Public Choice Perspectives and Other Frameworks

Some analyses of environmental policies use different theoretical frameworks and introduce other issues. Ferejohn (1974), for example, studied rivers and harbors legislation between 1947 and 1968 to examine the allocation of pork barrel projects and the relationship to particular features of Congress. Like many scholars using rational choice theory, he found a congressional bias for divisible or distributive policies that reflects the geographic (state and local) representation of Congress, the rules of decision making, and the operation of the committee system. Similarly, Mayhew (1974) postulated a distinct congressional preference for particularistic benefits that are highly visible and for which members can claim credit as elections approach. In one careful study of Superfund allocations by Congress, however, John Hird (1990) found little evidence of distributive politics. The pace of cleanup efforts and the distribution of Superfund monies in the 1980s were shaped chiefly by a site's hazard ranking, not by benefits accruing to members' districts.

While use of the familiar policy typology developed by Lowi is common in texts on Congress and public policy, it is not favored by all. For example, Oppenheimer (1974) studied the influence of the oil industry in decisions on the oil depletion allowance and water pollution control policy. He used

Murray Edelman's distinction between symbolic and material policies to characterize the shifting nature of water pollution control (from symbolic to strongly material by the 1970s). Since so many environmental policies carry an obvious symbolic message (*clean* air, *endangered* species protection, toxics substances *control*), studies of how members try to fashion policies with symbolic appeal would be of interest. One might ask, for example, to what extent symbolic values (intended for the general public) are traded off for less visible particularistic benefits in an effort to satisfy organized groups.

Even this brief survey of selected works on environmental policy making indicates there is no consensus on the most profitable frameworks of analysis. There also seems to have been little cumulation of environmental policy scholarship, and thus only halting progress in theory building. Beyond the addition of more substantive policy explorations, there would seem to be some value in comparing the findings from previous studies with the goal of identifying the conditions (e.g., public support for environmental policy or the perceived distribution of the benefits and costs of environmental protection) under which one might expect one form of policy making or another. Are there, in fact, clear patterns in the way Congress has responded to environmental policy issues? Can environmental policies be classified in a way that facilitates the search for such patterns, for instance, using the Lowi scheme or one that more clearly differentiates among types of environmental policy? For example, James Q. Wilson (1980:367–72) has distinguished four forms of regulatory politics that depend on the distribution of the benefits and costs of regulation: majoritarian politics, interest group politics, client politics, and entrepreneurial politics. Most of the major environmental policies of the 1970s are regulatory in nature, but to say that is not to say very much. The politics of toxic waste issues in Congress differs significantly from the politics of clean air, surface mining control, or protection of biological diversity (for example, in salience, technical complexity, and the organization of interests). It would be helpful to clarify the commonalities and the differences if we aspire to comparative analysis across policy areas and across time that will help explain congressional policy making.

Environmental Policy Oversight

Environmental policy scholars also could pay more attention to some features of congressional policy making ignored in the past. With most of the basic statutes in place, political interest has shifted from creation of major new programs to appropriations for those that we have and oversight of administrative implementation. The severity of budget cuts under the Reagan administration has prompted some concern for the way Congress considers environmentally related budget requests (e.g., Bartlett, 1984), but the time seems ripe for fuller studies of this process and its policy implications. Studies of the Budget and Appropriation committees would be a good place to start.

Similarly, Congress is credited with engaging in vigorous oversight of the Reagan administration during the early 1980s (Kenski and Kenski, 1984), which may have constrained the administration's decisions in the agencies to some extent. Although the Reagan administration did not appreciably change its environmental policy goals through 1988 (Vig, 1994), there is some evidence that EPA enforcement actions increased in response to public and congressional criticism (Wood, 1988).

Political conditions in the early 1980s facilitated congressional scrutiny of environmental bureaucracies, and the evidence indicates that Congress is capable of oversight when the right incentives are present. Between May 1981 (when she was confirmed as administrator of the EPA) and December 1982, Anne Burford testified fifteen times before congressional committees. EPA officials appeared more than seventy times between October 1981 and July 1982 (Cook and Davidson, 1985). Cook and Davidson (1985) compared the frequency of oversight hearings between the Ninety-sixth (1979–80) and the Ninety-seventh (1981–82) Congress and found that the House Agriculture, Energy and Commerce, and Interior Committees all increased their oversight significantly, as did the Senate Environment and Public Works Committee. Seong-Ho Lim (1992) found a similar pattern of increased congressional oversight of nuclear energy regulation as the salience of the issue rose—and as jurisdiction over nuclear energy widened following abolition in 1977 of the Joint Committee on Atomic Energy (JCAE). Not only did committee oversight increase, but it was far less supportive of the nuclear industry than were the actions of the old JCAE. Congress was reflecting a new public skepticism toward nuclear energy (see also Baumgartner and Jones, 1993).

Another example is provided by James Thurber's detailed examination of congressional oversight of the Department of Energy's (DOE) high-level nuclear waste disposal and environmental restoration programs, based on interviews with congressional, executive branch, and private sector respondents, and analysis of over eight hundred congressional hearings and other primary source documents. Thurber concluded that over time congressional oversight ranged from "benign neglect" to "micromanagement," but he found that congressional involvement in program implementation was dominated by mutual cooperation and co-management between the two branches (Thurber, 1991b). In this case, oversight serves as an early warning system to Congress, alerting it to policy problems. But it is also functional for DOE's management of the programs.

The frequency of oversight is clear enough in these figures, but the quality of the process and its impact are more difficult to judge. The general congressional record on oversight suggests that Congress is greatly limited in its capacity to engage in sustained and systematic oversight of technical policy administration and typically lacks sufficient political incentives to do so (Ogul, 1981; Aberbach, 1990). Holding hearings on Anne Burford's activities at the EPA or James Watt's record at Interior provides political dividends that cannot be expected under normal circumstances. What are the conditions favoring oversight of environmental policy actions? What is the quality of congressional oversight? Deficiencies in the process? Its impact on administrative decision making? Its impact on congressional evaluation of environmental policy and policy reformulation?

Aberbach (1979) has summarized conditions promoting a greater incidence of oversight. They include split partisan control of the presidency and the Congress, congressional efforts to satisfy group interests to which administrative agencies have been insufficiently responsive, a congressional desire to protect favored agencies, decentralization of the committee structure, an increase in staff resources, and publicity over and evidence of corruption in administrative agencies. The quality of oversight is similarly dependent on the circumstances. Quality is promoted by scarce fiscal resources and a desire to improve program effectiveness, an increase in program evaluation within government agencies (which puts pressure on Congress to review the results), and reforms in the congressional budget process which force consideration of spending demands within the larger context of national priorities and budget limitations. Taken as hypotheses, these generalizations can be tested with cases of environmental policy oversight.

On a normative level, critics justifiably complain that Congress too often fails to engage in systematic oversight of the bureaucracy. What oversight there is seems to follow the "fire alarm" model (in which the press, staff, or interest groups set off alarms over administrative misdeeds) than the more useful "police patrol," although scholars differ on that assessment (Aberbach, 1990). The potential for police patrol oversight—what Davidson and Oleszek (1990) describe as "active, direct, regular, systematic, and planned surveillance of executive activities"—is enormous. But members of Congress would need to become sufficiently motivated to adopt it, and critics doubt the political incentives are typically great enough. Nevertheless, students of environmental program evaluation generally are convinced that such motivation, both in Congress and in the executive branch, is essential to make good use of evaluation results and thus to improve the effectiveness and efficiency of environmental programs (Kraft, 1995).

External Participants in Congressional Policy Making on the Environment

As the review of oversight activities makes clear, Congress does not operate in a political vacuum. It responds to other policy actors, particularly in the executive office and the bureaucracy. Among other participants with whom members of Congress must interact are active members of the constituency, a multitude of organized interest groups, and government officials at the state and local level. Space precludes discussion of all external policy actors, but some brief references indicate the nature of extant scholarship and future possibilities.

Congressional relations with the president are the most thoroughly studied of these external influences. There is a large and insightful general literature on the subject (e.g., Jones, 1981; King, 1983; Ripley and Franklin, 1991; Thurber, 1991a) as well as a small body of material focusing on environmental and energy issues. The older case study literature cited above underscores Congress's historical dominance in environmental policy making. During the 1960s and 1970s, Democratic Party control of both houses of Congress encouraged a strong congressional role, as did the salience of, and public support for, environmental issues. Particularly striking was the activity of a number of congressional policy entrepreneurs who engaged in policy incubation, keeping issues alive by promoting studies and conducting hearings while public support for action grew (Kraft, 1973).

During the Carter administration, Congress demonstrated its capacity for a quite different role on energy issues, which Jones (1979) has called the "facilitator of interests"; denied effective representation in the executive office, energy industry interests in particular turned to the Congress (especially, the Senate) to make their case against Carter's national energy plan. Oppenheimer (1981) has explored that particular "obstructionist" role of Congress on energy issues in some detail. In the first six years of the Reagan presidency, Congress was divided in party control. With Republicans running the Senate and Democrats the House, it would have been difficult for

Congress to play a policy initiation role; but those conditions encouraged the defender-of-the-status-quo and the overseer roles. Although Congress did not prevent Reagan from achieving many of the organizational, budgetary, and regulatory changes he sought, it did blunt some of the president's more aggressive efforts to weaken environmental policy (Kraft and Vig, 1994; Vig, 1994).

One key battleground was the Office of Management and Budget (OMB). OMB had become influential in environmental policy following the issuance of President Reagan's executive order 12291, which mandated the use of cost-benefit analysis in regulation. Democratic committee chairs regularly denounced OMB's efforts to intervene (often secretly) in the writing of health, safety, and environmental regulations, and they held frequent hearings on the subject. In 1985, the chairs of five House committees even challenged the legality of such intervention in the D.C. Court of Appeals, asserting that OMB's efforts represented "systematic usurpation of legislative power" (Burnham, 1985). After further objections by congressional leaders, including John Dingell, chair of the House Energy and Commerce Committee, OMB made its regulatory oversight more open.

Ironically, many of the same complaints were raised again in 1991 and 1992 over President George Bush's Council on Competitiveness, yet another executive office device for exerting presidential control over environmental bureaucracies, often against congressional wishes (Vig, 1994). President Bill Clinton abolished the council by executive order two days after taking office and announced that Vice President Al Gore would be given new authority for such regulatory oversight.

Cases of this kind suggest the need to learn more about congressional-executive interaction on environmental policy formulation, budgeting, and oversight. One line of investigation would look to the process of policy legitimation. How does Congress legitimize environmental policy? Many scholars (e.g., Jones, 1979) celebrate Congress's role in representing the diversity of interests in American politics, for providing an extended process of inquiry, deliberation, bargaining, and compromise that helps to insure the technical soundness of policy proposals as well as their political acceptability. Yet congressional responsiveness to narrow but well-organized interests (especially on low-salience issues)—along with the fragmentation and low visibility of much policy making on the Hill—raises important questions about how representative Congress is of major constituency interests.

Consideration of policy legitimation suggests the related topic of the impact of organized interest groups on congressional decision making. To judge from the proliferation of interest groups in recent years and the use of new techniques of lobbying, previous conclusions of ineffective group activity must be questioned (Schlozman and Tierney, 1986; Wenner, 1990). The role of environmental groups in lobbying Congress merits special attention, and yet has not been the focus of much sustained inquiry. The same is true for business groups active on environmental issues (Kraft, and Wuertz, 1995; Bosso, 1994). For both we could ask about the range of strategies employed and their effects.

As noted above, roll call analyses find little evidence of the influence of groups on floor voting, but such a focus is too narrow to gauge the impact of environmental and business groups on public policy. One must turn to the interaction of groups with committee members and staff and examine how groups shape the definition of problems and the selection of policy alternatives in the earliest stages of policy formulation. Several studies of public interest groups suggest fruitful ways to proceed (e.g., Berry, 1977; McFarland, 1976; 1984). G. R. Boynton (1990) also highlights the importance of asking about the way in which diffuse public concern over the environment is represented in committee hearings as a form of policy legitimation. Much would seem to depend on the use of language and symbols rather than consideration of the details of policy alternatives.

A number of scholars have suggested the special role played by the interaction of interest groups (especially "clientele" groups), bureaucrats with program responsibilities, and interested members of the relevant committees and subcommittees. The argument is that "subgovernments," "issue networks," or "policy communities" (each usage reflecting a different concept of this interaction) tend to dominate congressional policy making within a narrow domain. This is particularly so for low-salience issues where cooperation among participants on the distribution of policy benefits substitutes for conflict. Some environmental policy issues (e.g., subsidies to the nuclear power industry) are plainly distributive, but more often the issues are regulatory. Thus one would expect to find differences in the organization of interests from one policy area to another.

One finding of special note is that few groups are so intensely committed to regulatory agencies that they testify at appropriation hearings for those agencies in contrast to those held for distributive and redistributive agencies (Meier, 1985:20). Why is this, and what is the significance for appropriation decisions for environmental protection programs? Particularly given recent reassessments of conventional views of subgovernments, Rieselbach's (1983) observations on the phenomenon are noteworthy: "[T]heory has outrun research: much of what we know is anecdotal . . . or contradictory" (167). We need, he says, clearer lines of demarcation among policy types, more detailed analyses of the contacts among the participants in the subgovernment, the strategy and tactics they employ, the conditions under which they are likely to succeed, and the results they are able to achieve. Such inquiry would be particularly valuable for natural resource policies, including ocean policy, public lands policy, and energy policy. There have been a few such studies in recent years (Temples, 1980; Chubb, 1983). There are also a few in the older natural resources policy literature (Foss, 1960; McConnell, 1966:chap. 7). But these only begin to scratch the surface of the role of subgovernments in environmental policy decisions.

One model for such studies is Christopher Bosso's (1987) examination of the intricacies of federal pesticides policy making from the 1940s to the 1980s. Using theories and insights from studies of subgovernments and issue networks, Bosso explains the changes over time in pesticide policy largely in terms of new challenges by environmental and consumer groups to the once dominant agricultural chemical industry and its allies in Congress and the Agriculture Department. The older "politics of clientelism" and its reigning paradigm based on the benefits of pesticide use, Bosso argues, collided head on in the 1960s and 1970s with new concerns for safety and environmental quality advanced by environmentalists and others. The result has been a gradual shift away from the old pesticide policy, along with frequent bouts of policy gridlock as the two coalitions of interests do battle in Congress and in the agencies. George Hoberg (1992) has made a similar argument about changing "regulatory regimes" for air pollution control and pesticides policy, as have Baumgartner and Jones (1993) for nuclear energy and related issues.

Congressional Performance and Environmental Policy

Aside from the numerous empirical inquiries summarized or suggested above, we should ask about the extent to which Congress performs its various roles successfully. The track record of the past twenty-five years invites such a retrospective assessment. Congress enacted the majority of leading environmental statutes in the 1970s and 1980s, and it has continued to revise and supplement the basic structure of U.S. environmental policy. It also appropriated hundreds of billions of dollars to fund federal environmental and natural resource programs, and as of 1993 was spending at a level of $21 billion a year. The impact of these statutes and spending on the nation is far greater than this amount may signal; there are high compliance costs for industry and heavy burdens placed on state and local governments. Large expenditures and compliance costs are also guaranteed for the future. One program alone, environmental restoration at federal facilities such as the DOE's nuclear weapons production plants, is estimated to cost nearly $300 billion over the next thirty years if present cleanup standards are maintained. In the 1990s, critics of environmental policy ask insistently whether the benefits in improved public health and environmental quality can justify such high costs, and even supporters readily acknowledge the need to improve program efficiency and effectiveness (Kraft, 1994b).

The general literature on Congress includes a considerable body of evaluative studies and commentaries, both positive and negative, but only a small part of that literature concerns congressional performance on environmental policy issues. Moreover, what we have reveals no consensus. Thus Jones (1974; 1975) criticized Congress's performance on the Clean Air Act in 1970, but found its handling of Carter's national energy plan (i.e., its searching criticism of it and its ultimate rejection) more appropriate (1979). Other students of energy policy (Katz, 1984; Oppenheimer, 1981; Kraft, 1981) found Congress's performance lacking because it failed to enact a policy that could guide the nation's future energy development, particularly in an environmentally benign direction, and also avoid the considerable economic and national security costs of a future energy crisis.

Cooley and Wandesforde-Smith (1970), writing just before congressional attention to environmental issues escalated in 1970, were harshly critical of Congress's response to emerging environmental issues: "The major conclusion is inescapable and bitterly disappointing to those aware of the environmental crisis facing the nation. It is that Congress has failed to do more than make halting progress through a series of incremental adjustments. Every chapter in this book points to serious flaws in the response of Congress to the basic moral and political issues posed by the quiet crisis identified by Stewart Udall in 1963" (p. 227). Some authors today would be equally critical and some would congratulate Congress for its record of the past twenty-five years of environmental policy actions.

One line of continuing criticism has focused on environmental gridlock in Congress in the 1980s and early 1990s. At the confirmation hearings for Bill Clinton's nominee for EPA administrator, Carol Browner, Senator Max Baucus observed that "for the past several years, Congress and the administration have been paralyzed by gridlock, particularly when it comes to environmental policy." Under Clinton, he said, "the American people expect all that to change." Six months into the Clinton administration, it became apparent that Baucus was premature in expecting gridlock to end. As one sign of continuing conflict over environmental and energy policy, the president's proposed BTU energy tax met defeat in the Senate as energy-dependent industries mounted an aggressive attack on the bill that the president was unable to deflect (Vig and Kraft, 1994b).

The historical gridlock to which Baucus referred has an uneven pattern. Sometimes Congress has been immobilized due to cross-pressures from organized interests, lack of public consensus, or White House intransigence on environmental policy. At other times environmental policy has received prompt and broad endorsement on the Hill (Kraft, 1994a). Following Gary Orfield (1975), one might say that Congress is an active and responsive shaper of public policy when the American public reveals sufficient interest and concern and where there is evident consensus on desired policy change. Thus, Congress followed public preferences in the early 1970s when it enacted the Clean Air Act and the Clean Water Act and other dramatic departures from previously modest environmental policies. Indeed, it has often been criticized for having been *too* responsive to an ill-informed and risk-averse public and for enacting ambitious and costly policies that overtax administrative capabilities—both in the 1970s and later (e.g., Jones, 1975). Congress again demonstrated its independence and activism under the condition of sufficient public support in the 1980s when it blunted the Reagan administration's attack on those policies (Kenski and Kenski, 1984).

Clarification of the standards for assessing institutional performance might help sort out such conflicting evaluations. What should one expect from the Congress—in policy making, oversight, representation, and public education? If Congress falls short in some areas, what institutional characteristics (e.g., fragmentation of authority) best explain its failures? Similarly, when it performs well, what accounts for its successes? How do such evaluations bear on possible institutional changes?

A frequent critique of Congress is that its time horizon is shaped excessively by the electoral cycle, providing few incentives to address long-term policy problems. Examples abound, from global population growth to national energy policy (Kraft, 1983; Uslaner, 1989). As the environmental agenda shifts from conventional pollution control and conservation of natural resources to emerging global environmental problems such as climate change and protection of biological diversity, what can the nation expect from Congress? What conditions might facilitate leadership on such issues—and policy innovation? What particular reforms in institutional structure, the role of advisory offices such as OTA and GAO, regulation of lobbying, and the like might provide the requisite capabilities and incentives? Those who look to representative political institutions for policy leadership in a democracy should find such questions worthy of investigation.

Conclusions

As this review of Congress and environmental policy makes clear, political scientists have examined a range of institutional characteristics and behavior that affect environmental policy decisions. Congress has been a natural focus of interest given its leading role in policy formation in the 1970s, its defense of environmental policy against the Reagan administration's assaults of the 1980s, and its reflection over much of the past twenty-five years of public concern about deteriorating environmental conditions. As the most powerful legislature in the world today, Congress affords students of politics an exceptional opportunity to study how a democratic government responds to the societal challenges and policy dilemmas posed by contemporary environmental problems. Despite the reigning cynicism of the day, it is hard to imagine the United States dealing seriously with climate change, protection of biodiversity, and sustainable development—or even the more prosaic issues of air and water pollution—without extensive involvement of the U.S. Congress.

If the Congress is to cope effectively with the environmental agenda of the 1990s and twenty-first century, however, it must improve the way it responds to policy needs. New institutional mechanisms that facilitate comprehensive and integrative decision making are especially desirable. This seems to be a consensus position in the environmental community as we approach the mid-1990s (National Commission on the Environment, 1993; Vig and Kraft, 1994b). It is not clear precisely what political scientists might contribute to this dialogue on institutional change, but many opportunities present themselves. At least some of the suggestions made above for new directions in research have value both for the discipline and for more practical advice to Congress and those with whom it works in the shaping of environmental policy.

As always, social scientists choose their research topics with widely disparate purposes in mind. Improving our understanding of congressional politics remains worthwhile. It is also important to widen the net of inquiry. From the perspective of interdisciplinary environmental studies, it is easy to recognize the inherent limitation of research based within a single discipline.

Environmental policy and politics can be studied using the theories and methods of political science, as is the case with most of the research summarized in this essay. We define interesting topics and choose approaches and methods in a way that reflects disciplinary (and personal) concerns. It is hard to ignore the important omissions in this conventional approach. One cannot pretend to offer inclusive analysis of environmental policy and policy making without considering the work of economists, legal scholars, planners, policy analysts, students of public administration, and natural scientists. If the major objective of such study is to build theoretical knowledge within the discipline, the constraints are minor. However, if objectives include application of theories and concepts from political science to the study of political processes of concern to a wider audience, other issues must be addressed.

Comprehensive analysis of environmental problems and public policy choices requires a greater range of skills than any single individual is likely to possess. Hence, interdisciplinary research offers much promise. For example, the technical and political components of nuclear waste policy making must be studied together to understand how Congress has tried to resolve the policy problems in this area. Political scientists could benefit from cooperative research with nuclear or chemical engineers knowledgeable about methods for handling radioactive wastes.

Short of such interdisciplinary studies, political scientists might direct their work to the larger environmental policy audience, both academic and practitioner. Doing so means considering the needs of such an audience when studies are designed and carried out, and when the findings and conclusions are reported. The prevailing incentive structures in academic research do not encourage either interdisciplinary research or work that is directed at a broad audience, although there are encouraging signs of change in that regard.

Environmentalists often remark that the next two to three decades represent one of the most difficult times in human history. The scope of environmental problems we face worldwide and the limited time frame for effective response leads some toward a pessimistic appraisal of democratic politics (Ophuls and Boyan, 1992). Even more conventional criticism of gridlock in Congress on clean air, energy taxes, or deficit reduction convinces others that the health of the U.S. political system is no longer robust. The Congress, and other legislative bodies at the state and local level, inevitably will be at the center of important democratic dialogue as the nation frames its environmental policies. The study of legislative politics offers a window through which to view these political challenges in an empirically and theoretically informed light. It may even hint at some solutions.

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8

The Bureaucracy and Environmental Policy

Walter A. Rosenbaum

The first Earth Day, that historic April 22, 1970, has become the signature for the environmental era. In fact, the era began six months earlier, when President Nixon signed the National Environmental Policy Act (NEPA), the first of twenty major federal environmental laws intended to alter radically the nation's environmental programs and priorities. Significantly, the era began with legislation intended to force a restructuring of the process by which all federal agencies made decisions affecting the environment.

Administrative reform has been a strategic principle in the environmental movement's politics from the environmental era's inception. Environmental legislation written during the 1970s commonly attempted to promote ecological protection by mandating fundamental changes in administrative behavior that eventually involved five presidential staff agencies, twelve cabinet departments, and two independent agencies. The success of this legislation was predicated upon unusual, sometimes unique, provisions in substantive policy, administrative structure and process directly challenging traditional values, and procedural norms firmly rooted in agency practices.

A large body of literature about these administrative strategies already exists, and of continuing analysis there appears no end. Any informative survey of this research must necessarily be selective. Since the bureaucratic impact of environmental legislation is a fundamental measure of the environmental movement's success, this essay focuses upon what the literature tells us about the consequences of these administrative innovations—good, bad, and otherwise—and, especially, upon the newer environmental agencies and programs. It concludes with a proposed agenda for future research based on important issues raised in the current literature.

The Administrative Style of Environmental Legislation

Environmental legislation since 1970 typically entails several administrative provisions, in different combination, that distinguish it substantively and procedurally from most federal laws outside the domain of the environment, public health, and safety.

Imposing Scientific Norms on Administrative Determinations

The environmental legislation of the last two decades intends to alter fundamentally the way scientific information and scientific criteria are used in administrative determinations affecting the environment. The laws attempt to compel this reordering of the administrative process in several ways. First, the National Environmental Policy Act mandates that all federal agencies must identify any programs or determinations significantly affecting the environment, define the adverse environmental consequences of such action through the development and use of relevant, interdisciplinary scientific analysis, and then use the impact assessment as distinct and significant criteria for policy evaluation. (Much the same thing was intended in the Federal Land Policy and Management Act of 1976, known as FLPMA, although it has been far less studied.) In effect, as Serge Taylor has observed, NEPA intends to institutionalize scientific analysis committed to ecological values within federal agencies. It means to compel decisionmakers to consider the ecological implications of policy thus revealed as a criterion apart from economic and political factors in calculating the acceptable trade-offs in policy choices (Taylor, 1984:chap. 4).

Most environmental regulatory programs, such as the Clean Air Act (1970), the Toxic Substances Control Act (1976), and the Clean Air Act Amendments of 1990 (especially provisions establishing Motor Vehicle Emission and Future Standards, Aircraft Emission Standards and National Emission Standards for Hazardous Air Pollutants) are also based on what Jurgen Schmandt has called "a new model of scientific regulation" (Schmandt, 1984; see also Bryner, 1993). Scientific and technological determinations must be one, and sometimes the only, standard by which substantive regulatory decisions affecting environmental quality are reached. This dependence upon scientific criteria in regulatory rule making is essential because most federal environmental programs since 1970 require the implementing agencies to specify quality standards for ambient air and water effluents, to identify the appropriate control technologies for pollution sources, to define acceptable risk from exposure to toxic or hazardous substances, and to make a multitude of other environmentally relevant technical judgments. In effect, federal statutes thrust upon federal agencies the burden of scientifically defining acceptable levels of pollution, pollution abatement, and risk of exposure to environmental pollutants. Moreover, agencies are increasingly aware that these technical determinations are likely to be critically reviewed by federal judges. Major agency scientific rulings are almost routinely challenged on scientific and legal grounds by disaffected interests. Beginning with the "hard look" doctrine of regulatory review adopted by federal courts in the 1970s, judges have become increasingly aggressive and searching in examining the scientific and technical basis of environmental rule making. The latitude of this judicial review has been further expanded by the Supreme Court's ruling in *Daubert v. Merrell Pharmaceuticals* (1993) that federal judges have an obligation to meticulously review any scientific evidence and testimony in agency rule making and to assess its scientific merit—an assurance that agencies will be even more attentive to legal craftsmanship in regulatory science.

Preventing Program "Capture"

Environmental partisans created many statutory barriers intended to frustrate "capture" of environmental programs by the regulated interests. One structural technique was deliberate program organization and staffing to assure a strong environmentalist bias at the outset—no gambles with implementation by ideologically neutral professional staffs. The Environmental Protection Agency's (EPA) enabling legislation, as Alfred Marcus observes, was deliberately intended to produce an administrative structure and professional staff "to represent environmentalists" and to institutionalize environmentalism within the federal government to counterbalance other agencies partisan to business and other regulated interests (Marcus, 1980:294–95). "Action-forcing" provisions in environmental laws were a procedural device to thwart capture. For example, EPA's first major regulatory programs, the Clean Air Act (1970) and the Federal Water Pollution Control Act (1972), abounded with strict compliance deadlines and explicit procedural timetables calculated to constrict agency discretion that might be exploited by regulated interests.

Statutory micromanagement has become a favored legislative strategy to frustrate "capture" of environmental programs by presumably hostile interests. EPA's statutory deadlines already exceeded eight hundred at the end of the 1970s. Deadlines further multiplied as Congress diligently toiled throughout the 1980s to erect ever more legislative bulworks to confound internal subversion of EPA programs, by a then presumably hostile Republican White House. One example is the Hazardous and Solid Waste Amendments (HSWA) of 1984, the first major legislation regulating underground storage tanks and a fortress of statutory deadlines and other provisions to thwart White House capture of the program. Much later, the Clean Air Act Amendments of 1990, with similar intention, named 189 toxic air pollutants for which EPA was ordered to establish regulatory standards within two years. Another strategy against agency "capture" is a congressional requirement that EPA submit 100 to 150 program progress reports annually for its review.

Using a different strategy to frustrate capture of federal surface mine regulation, authors of the Surface Mining Control and Reclamation Act (SCMRA) of 1977 added an extraordinary provision to Title II intended to prevent the Office of Surface Mining Reclamation and Enforcement (OSME) from hiring individuals previously associated with "any legal authority, program or function in any federal agency which has as its purpose the development or use of coal or other mineral resources" (Pub. L. No. 95-87, sec. 201[b] [1977] Harris 1985:46). Sometimes agency charters or programs were defined in statutory language calculated to bring them within the jurisdiction of the most environmentally sensitive congressional oversight committees.

The Exacerbation of Institutionalized Distrust: Congress and the Environmental Bureaucracy from 1970 to 1990

Congressional aversion toward bureaucratic culture, already evident at the beginning of the environmental era in fears of bureaucratic "capture," have been progressively exacerbated by the continuing, almost predictable, failure of most major environmental programs to achieve their legislated objectives. The congressional response has become an almost compulsive reliance on continually more meticulous arrangements to limit administrative discretion, to force the pace of regulatory decision making, and to multiply external pressures to achieve regulatory objectives. Early environmental laws relied upon restrained use of "hammer clauses" to compel strict agency implementation through mandatory program deadlines, sometimes explicit directions on procedural matters, provisions for citizen participation, and declarations of citizen "standing" to sue agencies to compel regulatory enforcement.

Compliance deadlines were an early congressional house style for most environmental enactments. Examples include:

> *The Clean Air Act* (1970): EPA was required to propose national ambient air quality standards within thirty days of the act's passage, to review and approve state implementation plans for the act within a year following proposal of air quality standards, and to develop technology standards to meet congressional mandated auto emission reductions within five years of the act's passage.
>
> *The Toxic Substances Control Act* (1976): EPA had to issue labeling and disposal regulations for polychlorinated biphenyls (PCBs) by July 1977, restrict their use to closed systems by January 1978, prohibit production by January 1979, and stop commercial distribution by July 1979 (Council on Environmental Quality [CEQ], 1977:5–6).

By the 1980s, congressional dissatisfaction with the implementation of environmental programs not only persisted—despite a decade of hammer clauses and the like—but also intensified with new suspicions that Republican administrators were bureaucratically subverting environmental regulation for partisan reasons. Embittered institutional and partisan animosities nurtured a distinctive culture of bureaucratic distrust in environmental lawmaking, expressed in ever more pervasive, severe, and comprehensive controls on bureaucratic discretion and predicated on an expectation of mismanagement. The culture was especially manifest in continually multiplying, detailed statutory prescriptions for program management, in more numerous and imperious program deadlines, in prolific, mandatory, statutory standards governing administrative risk assessment and pollution control specifications. The Hazardous and Solid Waste Amendments (HSWA), for instance, were a monument to legislative micromanagement:

> EPA was placed on tight schedules, and regulations were required to conform to detailed Congressional specifications. If EPA did not meet deadlines for promulgating guidelines, Congress had included statutory "hammer" clauses. . . . For the first time, Congress had issued regulations that would go into effect by a specified date unless EPA adopted its own regulations. These "regulations by statute" would most likely be much harsher than EPA's regulations. Thus . . . EPA had been encouraged to issue guidelines on time. (Cohen and Kamieniecki, 1991:8)

This divisive culture touched all federal environmental bureaucracies in the 1980s. The Superfund Amendments and Reauthorization Act of 1986 (SARA), for instance, assigned not only fifty-nine mandatory deadlines to

EPA but forty-eight more to nine other specified bureaucracies and an additional fourteen deadlines to unspecified agencies to be later named (U.S. GAO, 1988:3).

Congressional micromanagement of programs through detailed statutory procedural prescriptions was also deliberately intended, in some cases, to achieve preferred substantive policies. One of NEPA's creators clearly had this in mind when describing its requirement for agency environmental impact assessments as an "ends oriented agency forcing" device (Caldwell, 1982:11).

Almost all federal environmental laws since the 1970s have also required extensive, and sometimes innovative, forms of public involvement in their implementation and enforcement. More than 75 percent of all the public participation programs in federal statutes originated since 1970, and most were associated with environmental legislation (ACIR, 1980:100; Rosenbaum, 1978:81–97). Environmentalists vigorously promoted, and subsequently used, public involvement programs as a means of mobilizing support for environmental regulation and countering the administrative influence of regulated interests (Sabatier, 1975; Caldwell et al., 1976; Rosenbaum, 1983). Citizen standing to sue environmental regulatory agencies and other judicial arrangements for applying environmentalist pressure assured liberal judicial access to environmental interests, which, as Shep Melnick observes, was a strategic complement to "action-forcing" legislation, another institutional means for enforcing substantive policy goals (Melnick, 1984:127). The Reagan and Bush administrations, alleging that these arrangements imposed excessive delay and costs upon environmental regulation, vigorously attacked the citizen involvement structures administratively and judicially, eventually eliminating or incapacitating many of them (Greve, 1992).

Reform in Retrospect: Examining the Results

The history of political reform, like the history of science, often involves the slaying of beautiful hypotheses by ugly facts. Research literature tells us much, albeit not yet enough, about the consequences—intended and unintended—of the environmental era's administrative reforms.

Science and Administrative Norms

Three kinds of research literature provide a critical perspective on the scientific reforms associated with environmental programs: evaluations of NEPA, evaluations of the scientific basis for standards and emission control technologies required for air and water pollution regulation, and evaluations of the scientific basis for "risk assessment" methodologies used to identify hazardous and toxic substances regulated by federal law, including the Toxic Substances Control Act (TSCA) of 1976, the Resource Conservation and Recovery Act (RCRA) of 1976, and the Federal Pesticides Act of 1978.

NEPA's Impact. NEPA's most important action-forcing provisions are contained in Title I, describing the purpose and procedure to be used by federal agencies in preparing environmental impact statements (EISs) "in every recommendation or report on proposals for legislation or other major Federal actions significantly affecting the quality of the human environment" (sec. 102[c]). It is important to emphasize that section 102 mandates the *quality* of scientific data as well as the *method* of its utilization in administrative policy making: agencies are required to "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts" and to develop arrangements that will "insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations" (secs. 102[a] and [b]). NEPA then requires agencies to use these data in addressing five issues in all EISs: the environmental impact of proposed agency actions, the alternatives to the proposed action, the relationship between long-term and short-term impacts from the proposed action, and the irreversible and irretrievable resource commitments for the proposed action.

NEPA's proponents believed this linkage of information quality to procedural decision making was essential. "NEPA assumes that changing the rules governing the generation and distribution of knowledge will change the political and intellectual content of agency decisionmaking" (Taylor, 1984:8; see also Caldwell, 1982:2). With few exceptions, however, detailed summaries or case studies about the quality of information in EISs and its relationship to substantive policy decisions are scarce. Instead, evaluations tend to rely upon box scores for the number of EISs prepared and for federal actions or projects halted and altered by EISs (CEQ, 1985:162–75; Environmental Law Institute, 1981; Wichelman, 1976); or they rely upon analysis of court decisions concerning the adequacy of EISs, the procedural obligations imposed on agencies by the EIS process, and the courts' impact on agency consideration of EISs (Liroff, 1980; 1981; Anderson, 1973; Wenner, 1982).

These approaches probably lead to underestimating the impact of the EIS procedure on agency decision making by ignoring the important influence the process of EIS preparation may have upon relevant agency policies and, more importantly, by ignoring the ongoing relationship between EIS specialists within agencies and other policymakers. Additionally, the relationship between EIS formulation and substantive agency decisions may often be subtle and elude easy quantification.

Still, much is clear about the impact of the EIS process. First, most of the undesirable impacts predicted at NEPA's inception—especially huge agency workloads imposed by EIS preparation and delay of major development projects through EIS-related litigation—have not materialized. After an initial floodtide of 2,000 EISs in 1971, volume has abated until, by 1985, less than 550 were produced by all federal agencies (CEQ, 1971–85). The process has not incited a large volume of litigation-delaying administrative determinations and obstructing federal projects (Liroff, 1981; Wenner, 1982; CEQ, 1985:162–65). Serge Taylor's meticulous summary of EIS-related litigation from 1970 to 1981 suggests that about 10 percent of all EISs ended in litigation and about 11 percent resulted in court injunctions that rarely caused serious delay in major projects, like nuclear power plants (Taylor, 1984:359). While assertions of unreasonably high cost have sometimes been made about EIS preparation (Bardach and Pugliaiesi, 1977; Lave, 1981), this has not been a finding common to most studies of the process.

Second, evidence that the EIS process has caused significant, environmentally benign changes in the development policies and projects of federal agencies is fragmentary, at best, and confined mostly to recent research during NEPA's second decade. Most researchers have been hard pressed to discover convincing evidence that EISs have had a major impact upon substantive agency decisions (Anderson, 1973; Dreyfus and Ingram, 1976; Hill and Ortolano, 1976; Liroff, 1976; Ozawa, 1982). Information is most often described as "fragmentary," "anecdotal," and "scattered." The few studies attributing importance to the EIS process also admit, almost routinely, its tenuousness within agencies. Thus, Mazmanian and Nienaber observed in 1979 that despite the Army Corps of Engineers' "serious effort to cope with environmental considerations" in project development "it is yet to be seen whether the Corps will want or be able to continue incorporating environmental considerations into its construction activities" (Mazmanian and Nienaber, 1979:3, 183). Lynton Caldwell, one of NEPA's authors, seemed to be writing an epitaph for his own creation in 1978: "Virtually nobody seems to read and make use of environmental impact statements, (*particularly*) the decision-makers who must act on the projects for which the statements are prepared" (Caldwell, 1978:55).

By 1984, however, Caldwell had concluded (at least in respect to the Bureau of Land Management, the Corps of Engineers, and the U.S. Forest Service, where his more recent research occurred) that "multidisciplinary science is generally being integrated into the planning processes of the major resource management agencies," so that the environment is "better managed" and "the case for [NEPA's] effectiveness is stronger" (Caldwell, 1984:87, 73). A NEPA coauthor might be suspected of bias, but Serge Taylor's recent study of NEPA's impact upon the Forest Service and Corps of Engineers reaches much the same conclusion: "By a rough but telling standard of judging outcomes, the EIS process (in the two agencies described at least) not only tends to produce environmentally better outcomes but does so in some socially efficient sense by making (again roughly but significantly) the right kinds of distinctions among situations" (Taylor, 1984:150; see also Cohen, 1979).

Third, the EIS process has altered the structural relationships between organized interests and agencies by creating new means of access and new political strategies that seem most to benefit environmental groups. Regulated interests have, with some success, exploited the requirements for public review and comment on draft EISs and the related "environmental assessments" together with opportunities to appeal to judicial review of agency EIS preparation. But environmental interests and their allies have, it appears, done it best and with the greatest net gain in political advantage. Thus, Shep Melnick counts NEPA among the major reasons for "a new era in administrative law" characterized by the rapidly expanding participation of environmental and other nontraditional groups in administrative decision making (Melnick, 1983). Significantly, many commentators have suggested that the enhanced administrative influence derived from NEPA can be generalized to many agency activities unrelated to the EIS process itself (Liroff, 1980; Taylor, 1984:260–61; Magat, 1982).

Finally, the EIS process has opened agency preparation of impact assessment to close judicial scrutiny and, in the opinion of most observers, the courts have become a major external influence strongly encouraging strict compliance with the procedural requirements of section 102. But there is no agreement upon the consequences. One common assertion is that agencies, anxious to make their EISs a fortress against judicial criticism, pack the documents with technical data of uncertain policy relevance or write "telephone book" statements bloated with too many issues and details undifferentiated in importance (Bardach and Pugliaiesi, 1977). Equally pessimistic is the very common observation that the courts have interpreted NEPA in a manner that compels strict procedural compliance with section 102 but imposes no substantive agency obligation to make policy decisions responsive to issues raised in relevant EISs (Rosenbaum, 1974; Henderson and Pearson, 1978; Mandelker, 1981; Wenner, 1982). A few scholars, including Serge Taylor and Lynton Caldwell, believe close judicial scrutiny has compelled agencies to make substantive policy changes based in EIS documents. At best, one concludes that the administrative effect from judicial review of EIS procedures is uncertain.

One might also ponder the disciplinary factionalism of NEPA evaluations. Economists, with few exceptions, seldom find NEPA a constructive innovation. Most lawyers would agree, at least to the extent that NEPA is failed legislation in light of its intentions. It is the academic social scientists, primarily in political science, public administration, and sociology, who claim to discover more constructive aspects to NEPA. At times evaluations of NEPA have been so strident and unqualified that academic sociology rather than scholarly rigor would seem responsible. Consider, for instance, a leading economic scholar's dismissal of NEPA: "The principal effect has been to slow passage of new legislation, the enactment of agency decisions, and the commencement of private sector projects. . . . Generally, the resulting impact statements are so voluminous that no one considers or even reads them, much less attempts to modify decisions on the basis of their findings" (Lave, 1981:126–27).

Setting Standards and Assessing Risk. Most environmental legislation since 1970 requires federal agencies to protect individuals from adverse health effects associated with exposure to hazardous or toxic substances, particularly carcinogens. The mandates commonly impose upon the implementing agencies—usually EPA, the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA), the Department of Agriculture, or the Consumer Product Safety Commission (CPSC)—responsibility for utilizing scientific research in three related ways: to identify levels of risk associated with varying human exposure to suspected hazardous or toxic materials ("risk assessment"), to specify permissible levels of human exposure according to statutory criteria "acceptable risk," and to propose strategies for reducing or eliminating unacceptable risk.

Four problems inherent to risk assessment have become evident, driving attempts to improve policy implementation toward a regulatory paradox. First, the scientific data upon which agencies are expected to rely in defining "dose-response" parameters and other variables essential to risk assessment is commonly absent or inconclusive (National Research Council 1983:6). Moreover, ongoing research often frustrates continuity in regulatory rule making by yielding evidence inconsistent or contradictory to earlier determinations upon which regulations are grounded. EPA's initial ambient air standard for fine particulates and later risk assessments for dioxin exemplify the problem. Both determinations were the basis for extremely costly and pervasive regulatory regimes grounded on criteria proven unreliable or highly problematic by many later studies. EPA, compelled to redefine its particulate standard, may have to abandon its existing dioxin standards as well. The result is politically and economically costly regulatory revision and unpredictability (U.S. Environmental Protection Agency [EPA], 1990a; Cohrssen and Covello, 1989:37–38).

Second, political values and ideological bias often appear to influence the opinion of scientific experts, as well as administrators, in resolving technical problems and controversies associated with risk assessment and definitions of acceptable risk (Nelkin, 1984:preface; Mazur, 1981; Crandall and Lave, 1981; Conservation Foundation, 1984b:261–318; Dietz and Rycroft, 1987:77–117). The National Research Council has identified at least fifty phases in the risk assessment process where uncertainty requires scientists to make "inferential bridges" (1983:29–33; see also House and Shull, 1985:124–173). The selection among alternative "bridges" can apparently be influenced by political or economic bias.

Third, the statutory criteria intended to guide agency identification of substances to regulate and to define acceptable risks of exposure are frequently vague and inconsistent, making discretionary judgments inevitable and obscuring how scientific and nonscientific criteria are actually related in the decision-making process. Legislative histories often contribute little to clarifying statutory intent. Chris Schroeder has identified fifteen different environmental laws passed by Congress since 1969 involving at least three substantially different statutory formulae for defining acceptable risk. Even within single categories, the laws require different weighing of criteria and, sometimes, leave relative weights unspecified (Schroeder, 1989:266–68). Statutory language, in any case, is commonly vague:

> *The Clean Air Act:* Regulates any "air pollutant . . . which . . . may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness" and requires a standard with "an ample margin of safety to protect the public . . . health" (secs. 112[a][1] and 112[b][1][b]).
>
> *The Resource Conservation and Recovery Act:* Regulates substances that "may cause, or significantly contribute to, an increase in serious irreversible, or incapacitating reversible illness; or, pose a . . . hazard to human health or the environment," to a standard "necessary to

> protect human health and the environment." (secs. 1004[5][a][b] and 3002–4).

Finally, the fundamental science base for existing agency risk assessment appears increasingly precarious. Growing experience with animal studies, the primary source of risk data in most agency risk assessments, has caused an increasing number of informed scientists to doubt the reliability of such experiments. The gravity of the problem became evident when an expert review panel reported in 1991 to the National Institute of Environmental Health Sciences, the government's primary animal testing agency, that its current testing protocols might produce false evidence of carcinogenity in as many as two-thirds of the chemicals tested (Greenhouse, 1993).

Paradoxically, risk assessment controversies have intensified in the 1990s concurrently with influential proposals that risk assessment should be adopted as the most scientifically and economically defensible calculus for establishing regulatory agendas at EPA and other agencies where chronically confused program priorities prevail. EPA's administrative disarray, resulting from three decades of legislative mandates in proliferating disorder, is increasingly cited as a major explanation for the agency's regulatory inadequacies. "Risk-based regulation," epitomized in recommendations to the EPA by its Science Advisory Board (U.S. EPA, 1990a), would require Congress to concede to EPA and other relevant regulatory agencies much greater administrative discretion in setting their environmental priorities and allocating the requisite resources between legislative programs and within them. While risk-based regulation remains highly controversial (Andrews, 1993), EPA is likely to have some modest opportunities to use it in implementing the Clean Air Act Amendments of 1990.

Environmental equity, a rapidly emerging administrative issue of the 1990s, has also created a new and increasingly important problem in bureaucratic risk assessment and other environmental policy making. Until the early 1990s, environmental agencies gave virtually no attention to assessing the extent to which their programs and regulations created, or perpetuated, inequitable exposure of economic and racial minorities to environmental hazards. Fragmentary data suggests such environmental inequity may exist but scientifically reliable data is largely lacking (Bullard, 1990; U.S. GAO, 1983; Bryant and Mohai, 1992). An early EPA initiative attempted to define the scope of the problem and the remedies needed in agency decision making (U.S. EPA, 1992a). However, the equity problem is likely to become one of the dominating policy issues of environmental administration in the 1990s. Considerable research will be essential to define the magnitude of the problem scientifically and to develop strategies for integrating equity assessments into environmental regulations and other policies.

Research on the implementation of risk assessment procedures has been conducted primarily by economists, lawyers, and natural scientists. Until the mid-1980s, the general lack of major theorizing and comprehensive studies of environmental decision making among political scientists, lamented by Paul Sabatier and Geoffrey Wandesforde-Smith (1979), was obvious. By the 1990s, however, political scientists had clearly recognized that risk assessment and its related administrative processes were a new genre of policy making to which many traditional concerns of policy analysis were relevant. Early research concerned three fundamental political issues in risk assessment: (1) In what ways is scientific data obtained and used by agencies in risk assessment processes? (2) How important is scientific and technical data in comparison to economic or political considerations in risk assessment? and (3) How do varying procedural and structural arrangements for risk assessment affect the way technical information is used and conclusions are reached? (A useful survey of earlier studies may be found in Hadden, 1984:170–78).

Beginning in the latter 1980s, political scientists have increasingly expanded this research agenda, particularly by examining political variables affecting the character of risk communication and its consequences (Krimsky and Plough, 1988; Dunlap et al., 1993; Wildavsky, 1987; Graham et al. 1988) and, in particular, the "NIMBY" ("not in my backyard") phenomenon. Also evident is a growing sophistication in understanding how the interplay of sociological and cultural influences with political factors can affect administrative risk assessment and its consequences (Jasanoff, 1986; Dietz and Rycroft, 1987; Wildavsky and Douglas, 1981). More recently, research has begun to focus on the challenge of formulating administrative criteria for equity in the risk assessment process and for institutionalizing equity standards in regulatory decision making.

From this newer research have emerged some significant conclusions about the impact of scientific data and norms on agency decision making. First, missing data and differing research methodologies in getting data are fundamental reasons why agencies have had great difficulty in meeting the statutory deadlines for standard setting and enforcement in most recent environmental legislation, including, especially, the Clean Air Act, the Federal Water Pollution Control, the Toxic Substances Control Act, and the Resource Conservation and Recovery Act (Doniger, 1978; Lave and Omenn, 1981; Dorfman, 1982). Second, legislation with a multiplicity of different, often inconsistent statutory criteria for determining acceptable risk in regulation—the norm for most environmental legislation, as illustrated by the Toxic Substances Control Act—forces administrators to adopt balancing formulas among scientific, economic, and political criteria in which scientific considerations are often subordinate or the relative weight of differing criteria is obscured (Crandall and Lave, 1981: intro.). These administrative improvisations, however inevitable, beget regulatory delays through judicial challenges to agency discretion and encourage judicial activism in prescribing for agencies the appropriate administrative formulas to follow (O'Brien, 1987).

Third, even statutory provisions requiring exclusively scientific criteria for administrative determinations of acceptable risk often do not prevent consideration of political and economic factors in the actual decision making. This intrusion of presumably proscribed considerations has been found to affect risk assessment associated with standard setting under the Clean Air Act, the Federal Water Pollution Control Act, the Safe Drinking Water Act, and the Occupational Health and Safety Act, among others (Crandall, 1981; Mendeloff, 1988). Crandall and Lave's blunt conclusion after studying risk assessment procedures in five federal regulatory agencies in the latter 1970s depicts a situation frequently described by other researchers: "Regulators do not seek scientific contributions in a way that is likely to elicit the most helpful analysis and are not able to utilize the material they do receive. Both problems stem partially from the inability of agency heads to interpret inconclusive information. The problems are exacerbated by scientists' alienation from the chaotic, pressured world of the regulator" (Crandall and Lave, 1981:17; see also Graham et al., 1988: esp. chap. 7).

Fourth, a small but developing set of studies suggests that political and economic bias may influence the methodologies preferred by scientists in assessing risk under conditions of uncertainty (McCray, 1983; Whitmore, 1983; Lynn, 1986). Frank Lynn's survey of research scientists involved in OSHA's risk assessment of carcinogens found, for instance, that the more politically and socially conservative scientists working for industry "chose scientific assumptions that decreased the likelihood that a substance would be deemed a risk to human health" while more politically liberal government and university scientists tended to favor assumptions increasing the probability that a substance would be deemed to require regulation (Lynn, 1986:41). Perhaps the most administratively significant implication of these findings is the debate raised about the efficacy in using a purely organizational arrangement to separate procedures for "risk assessment" from those for "risk management" in an attempt to free technical decision making of "contamination" by political and economic bias.

A few studies suggest, more optimistically, that agencies improve their science base for regulatory decisions and their capacity to evaluate technical data when they have enough time to learn (Greenwood, 1984). These writings often assert that the uniqueness of the regulatory and scientific procedures mandated by environmental legislation in the 1970s did, in fact, force administrative innovation in which the quality of scientific data and its utilization improved as the decade progressed. But this more hopeful perspective remains a minority opinion.

Finally, research generally attributes to the federal courts a major influence in biasing agency decision-makers toward the most risk-averse definitions of acceptable risk when setting regulatory standards. This administrative "tilt" in the characteristic situation of scientific uncertainty attending agency risk assessment is presumed to benefit environmental interests and to amplify their influence in administrative risk assessment—as if to confirm their wisdom in promoting enhanced citizen access to the courts with environmental statutes and regulations (Melnick, 1983:chap. 10).

Is "Uncaptured" Better?

By the mid-1990s, researchers were troubled by the social and economic costs of achieving uncaptured agencies and by newer, less-anticipated threats of agency capture emerging in the 1980s. Few researchers now believe that EPA, the Office of Surface Mining and Enforcement (OSME), the National Oceanic and Atmospheric Administration (NOAA), or other agencies with major new environmental programs originating in the 1970s will be "captured" in the traditionally anticipated manner, or even in the style of the Nuclear Regulatory Commission, where leadership and staff have been, until recently, unabashedly pronuclear if not always accommodating to specific utilities.

The White House and "Backdoor" Capture. The 1980s compelled researchers for the first time to examine in depth the extent to which the management of environmental agencies through the administrative presidency could, or should, permit a hostile economic or ideological "capture" through White House agency. The aggressive "regulatory reform" initiated by Ronald Reagan and perpetuated with diminishing intensity through the Bush administration sharply focused the attention upon how the president's administrative authority and the institutional resources of the executive office could be used—and possibly abused—to influence administrative policy making (Nathan, 1983; Palmer and Sawhill, 1984; Portney, 1984; Eads and Fix, 1984).

Much of this research examined (a) how presidentially appointed agency leaders often used their discretionary authority and budgets to impede or defeat implementation of ideologically objectionable environmental laws; and (b) how executive orders requiring the Office of Management and Budget (OMB) to review proposed agency regulations could be—and often were—used to suppress or revise proposals ideologically unsatisfactory to the White House (Percival, 1991). The existence of OMB's so-called backdoor influence in the regulatory process has been especially well examined in decision making by EPA and OSHA (Harris and Milkis, 1989). In addition to OMB, it also became apparent that presidential staff and advisory groups, such as the Reagan and Bush White House Councils on Competitiveness, could informally exercise similar influence. Most scholars believe the Reagan administration's early reform efforts at EPA, OSHA, and the Department of the Interior were momentarily effective, but seldom legally and ethically indefensible. In some instances, such as surface mine regulation, the Reagan and Bush administrations severely impeded regulatory implementation. These events pose a profound question, now a continuing debate among scholars, concerning the appropriate magnitude of administrative management which the president should exercise over environmental regulation as the constitutionally accountable head of the executive branch.

The Costs of Uncapture: Regulatory Enervation? Most researchers, especially when discussing EPA's legislative mandate and its implementation, appear to accept the notion that the innovations intended to prevent "capture" have often entailed high costs: frequent inflexibility in implementation; at least some economic inefficiencies, program delays, and diminished agency credibility. The harshest criticism usually falls upon program deadlines and technological innovation mandated through action forcing, and upon strict, risk-averse, regulatory health criteria. Political scientist Charles Jones, early characterizing the Clean Air Act as "speculative policy," adopted a definition implicitly accepted by many other scholars for later environmental laws like TSCA, RCRA, and Superfund: "policy beyond capability . . . a response to estimates of what [Congress believes] will satisfy the public" (Jones, 1974:273).

Few researchers, environmentalist or otherwise, have a good word for the early administrative style of EPA and OSME, where environmentalist values were the most thoroughly institutionalized. Writers have commented on EPA's "legalistic," "confrontational," and "politicized" style, its legalistic approach to regulation, and its "rigidities" in interpreting its legislative mandate (Daneke, 1984; Vogel, 1986:178; Marcus, 1980:163). The OSME emerges from most descriptions of its first years under the Carter administration as even more aggressive and uncompromising than EPA (Edgcomb, 1983:318; Harris, 1985:chap. 3). Some scholars have attributed this early zeal to staff and leadership inexperience, or a desire by agency managers to establish strong constituency bonds with environmental groups, or to other factors which time and experience might mitigate with better results.

But a significant number of critics (including many admittedly hostile to most environmental legislation of the 1970s) assert that the administrative style of 1970s environmental legislation renders agencies like EPA and OSME inherently incapable of learning from experience in ways that promote more administrative and economic efficiency. "The political constituencies that created most of [the new environmental agencies] . . . were largely unaware of and uninterested in the problems of potentially rigid and nonadaptive regulation" asserts a version of this argument. "Indeed . . . these are the very traits that were meant to ward off the evils of capture" (Bardach and Kagan, 1982:148; see also the collection of articles in Baden and Stroup, 1981). While researchers more sympathetic to environmental regulation customarily deny an inherent EPA incapacity to implement regulatory responsibilities, they frequently acknowledge that policy implementation depended less upon EPA initiative than upon the weight of pressure generated by environmentalist litigation and congressional oversight—pressure that further intensified during Republican efforts at "regulatory reform" in the 1980s (Conservation Foundation, 1984b:432–42; Bartlett, 1984; Davies, 1983; U.S. GAO, 1981; 1983; 1984a). Ironically, many researchers also believe that one pernicious legacy of the congressional mistrust toward EPA nutured during the Reagan era is an even greater profusion of mandated deadlines, micromanaged programs, "hammer" clauses and other arrangements in new statutes obstructing, rather than facilitating, regulation to the point where many scholars believe the agency is now mired in a "pathological cycle of regulatory failure" (Lazarus, 1991:363).

David Vogel has argued that the economic and administrative inefficiencies designed into the newer environmental agencies are unnecessary, in any case, because American interest group politics has become too pluralistically competitive to permit business capture of new regulatory agencies. It is the very success of new nonbusiness groups like environmentalists, he asserts, that makes the "capture" they fear now improbable. "The significant increase in the number of non-business interest groups since the mid-1960s has made the making of public policies affecting business more public—and their outcomes more problematic" (Vogel, 1986:278).

The Office of Surface Mining Reclamation and Enforcement has been the most consistently criticized among all the new environmental agencies. It is hard to find a good word for the design of OSME's statutory mandate, its administrative structure, or its implementation of SMCRA even among scholars normally sympathetic to environmental regulation. Critics have been quick to assert that OSME's deliberate staffing with environmental partisans resulted in excessive zeal in enforcing program deadlines and regulation writing. Critics often cite OSME's alleged intransigence in requiring technology standards rather than performance standards for regulations affecting "restoration" of mined land to epitomize what they consider the worst "command and control" regulation (Harris, 1985:chaps. 7, 8; Leone, 1977). OSME's brief but turbulent history and the resulting disruption in implementing SMCRA were, partially, the result of Ronald Reagan's early "regulatory reform" and not wholly the product of badly drafted and implemented legislation. Nonetheless, OSME's apparent rigidness in writing and enforcing regulations had become a problem even for President Carter, a strong proponent of surface mining regulation. The virtual silence of scholars in defense of OSME's performance between 1978–87 suggests that it may become the "worst case" example of environmental innovation gone awry in the federal bureaucracy.

When Does Reform Become Capture? The "regulatory reform" and "regulatory relief" through which environmentalists believe the Reagan and Bush administrations attempted to subvert the intent of environmental regulations relied on strategies that, in nature if not by intent, are traditionally recognized as inherent to the administrative presidency. The resulting controversy has reinvigorated an abiding issue for researchers: under what circumstances, and by what criteria, can it be determined that legitimate executive authority is exercised to obstruct bureaucratic implementation of environmental law? During the era of "regulatory reform" in the 1980s, four executive actions provoked the questions: (1) reducing program budgets and priorities; (2) reducing and redistributing agency personnel; (3) requiring, when possible, that agencies adopt benefit/cost analysis when writing or revising regulations; and (4) requiring OMB review and approval of agency regulatory proposals when possible.

The first two strategies created the greatest public controversy and most immediate disruption at EPA, OSME, NOAA, and other agencies with environmental programs. These tactics also mired the Reagan administration in protracted, politically costly struggles with Congress and environmental groups that convinced the White House by 1984 to rely more on other means to achieve its purposes. The most drastic use of budget and personnel reductions to achieve "regulatory relief" occurred during the first three years of the Reagan administration. Between fiscal years 1981 and 1984, for example, EPA's water quality program budget had been reduced by 59 percent, its air quality program by 31 percent, and its hazardous waste and toxic substances expenditures by 34 and 40 percent respectively (Crandall and Portney, 1984:67–68). During this period, EPA personnel declined by about 23 percent. Studies from the mid-1980s commonly assert that these techniques produced a major decrease in EPA's regulatory enforcement, in new regulations, and in the implementation of program deadlines (Vig and Kraft, 1984; Crandall and Portney, 1984).

Even greater disruption occurred in OSME, where during this period personnel were reduced by almost a third. The rate of ticket writing and other indicators of enforcement declined sharply between 1981 and 1983; OSME's technical assistance programs to the states almost ended; and judicial fines against violators of the law were largely uncollected (Menzel, 1983; Hedge and Menzel, 1985; Harris, 1985:chap. 8).

These swift changes were achieved without legislative amendment to the major laws enforced by the agencies or White House directives inconsistent with the laws' substantive intent. Nonetheless, the effect was to delay the laws' implementation, to constrict the administrative resources essential to carrying out the intent of the law, and otherwise to blunt its impact. However, by the end of Reagan's first term Congress had restored a substantial portion of the reduced agency budgets. Agency reductions in workforce and other personnel changes were largely curtailed or reversed. The most ideologically zealous "regulatory reformers" were eliminated from middle- and upper-echelon management at EPA, NOAA, and OSME. Nevertheless, most observers agree that budget and personnel policies from 1981 through 1984 significantly delayed major program implementation at EPA, impaired enforcement of existing programs, and slowed essential research activities in major programs throughout the 1980s, although substantial improvements occurred with renewed program support during the Bush administration. But OSME's management, apparently with continuing White House indulgence, perpetuated an ideologically inspired style of recalcitrant regulation into the early 1990s (see especially documentation in U.S. GAO 1990:103). The long-term consequences have yet to be calculated.

The new requirement that agencies prepare "regulatory impact analyses" (RIAS) when creating and revising environmental regulations, was issued as executive order 12291 in February 1981. It was the first White House directive requiring that a benefit-cost test be applied and met in all cases where it was not expressly excluded by law. It also invested OMB with unprecedented authority to oversee agency compliance with the order "off" the public record in regulation writing or revision (Smith, 1984; Andrews, 1984b). Environmentalists, convinced that benefit-cost analysis was inappropriate and prejudicial to environmental regulation, feared its principal impact would be to subvert the goals of existing environmental legislation (Kasper, 1977; Green, 1977; Swartzman et al., 1982).

But subsequent studies suggest RIAs have had a very limited impact on environmental policy making. Many environmental statutes, including the Clean Air Act and Clean Water Act, prohibit benefit-cost analysis as a criterion for regulatory decision making. Many regulations do not meet the $100 million impact criterion required for review under executive order 12291. Thus, OMB deemed only 62 of 2,802 regulations appropriate for its review in the president's first year of office (U.S. GAO, 1984a). OMB's tardy guidelines for preparation of RIA and agency inexperience with the process produced many RIAs too technically deficient and confusing to be useful. Many agency officials have been reluctant to justify regulatory decisions on the basis of RIAs whose inherent limitations may not withstand rigorous judicial review. And RIAs quite often fail to identify the costs and benefits most important to decision-makers. EPA's experience is instructive. Their analyses are considered to be among "the most ambitious and detailed," yet they are rarely reported to have influenced regulatory decisions (Grubb et al., 1984; see also Whittington and Grubb, 1984). Thomas McGarity's 1985 review of RIAs at EPA concluded that the documents were seldom influential in decision making:

> The Agency's RIA Guidelines . . . acknowledge that cost-benefit analysis is of limited usefulness to real-world decisionmaking because determining which regulatory options are best in terms of economic efficiency often is made difficult by uncertainties in data, by inadequacies in analytical techniques, and by the presence of benefits and costs that can be quantified but not monetized or that can only be qualitatively assessed. . . . In actual practice the regulatory analysis documents are even less useful to the lead offices and the Work Groups. . . . Under the agency's typically tight schedules, the members of the Work Group must make decisions without awaiting the completed document. (McGarity, 1985:111–316)

Have RIAs then become a ritual? Some observers think the RIA process has made agency decision-makers more sensitive to regulatory costs and, sometimes, willing to propose alternatives that would not be considered on purely political grounds. The most costly policy alternatives can sometimes be identified and removed from agency consideration by using RIA procedures. Few researchers are willing to say much more.

The most significant impact of executive order 12291 upon environmental programs appears to be the least overt. By vesting in OMB the authority to consult with environmental agencies "off the record" during the preparation of RIAs, the president's order armed OMB with enormous influence over agencies during regulation drafting, review, and revision prior to formal proposal "on the record." During the first Reagan administration, notes Martin Belsky, OMB exerted this influence with considerable effect: "Some regulations were suspended or postponed because of direct requests by OMB. In other cases, fear of possible OMB action led agencies to modify rules they had previously adopted. OMB could, and did, both postpone and actively block regulations. Such regulations were placed in the 'black hole' of regulatory limbo as OMB, through its review power, indefinitely postponed promulgation" (Belsky, 1984:48). Because this influence occurs outside of the formal, public rule-making process required for most regulatory proposals, it is shielded from public scrutiny, and free of the strict judicial standards of documentation and due process required in formal rule making. It has institutionalized, in the view of some scholars, the White House's "backdoor" influence on a rule-making process supposed to be free of covert participation by the chief executive or his subordinates.

Who or What Got "Hammered"?

Of the many hammer provisions in environmental legislation since the 1970s, strict compliance deadlines have been judged the least successful. The research literature is replete with examples, cited by partisans on all sides of the ideological debate over environmental regulation, to prove that deadlines routinely fail. As experience with environmental legislation increases, researchers have largely shifted from arguments over the efficacy of action forcing in achieving its stated objective—to force program completion within mandated periods—to arguments about whether secondary benefits exist in action-forcing deadlines despite their failure.

Economists (almost always) and lawyers (usually) offer the bleakest appraisal of action-forcing deadlines. For different reasons, both tend to agree that action-forcing statutory commands are inherently flawed by failing to provide sufficient incentives for agencies and regulated interests to comply voluntarily with their provisions (Henderson and Pearson, 1978; Portney, 1990:chaps. 1, 2, 3, 8). The litany of alleged costs entailed in such predictable failure is usually assumed to greatly exceed any benefits. Among these costs: diminished agency credibility from repeated failures to meet compliance deadlines or to enforce them on regulated interests; litigation delaying agency implementation of the law; economic inefficiencies imposed upon regulated interests by unpredictability in enforcement of action-forcing laws; chronic agency resort to misinterpretation or evasion of the law in order to implement programs despite anticipated deadline failures; repeated congressional intervention in program implementation creating costly political externalities, and more. Shep Melnick's verdict is the epitaph others would apply to action forcing: "The deadline has become a hollow symbol in search of tenable underpinning" (Melnick, 1983:128).

Not all researchers agree with these judgments. Some blame Congress for blunting the effectiveness of action forcing through excessive use. Richard N. L. Andrews, for instance, argues that EPA has been burdened with a congressionally created administrative "overload" (Andrews, 1979). Faced in rapid succession between 1970 and 1977 with responsibility for the Clean Air Act, Federal Water Pollution Control Act Amendments, the Safe Drinking Water Act, the Toxic Substances Control Act, and the Resource Conservation and Recovery Act, the agency was forced to set priorities among programs although it lacked formal authority to create such a comprehensive implementation agenda. It chose to concentrate first upon the major air and water pollution programs, leaving many deadlines in TSCA, RCRA, and the Safe Drinking Water Act deliberately unmet. From the perspective of the mid-1980s, Edward Woodhouse concluded, in a similar vein, that EPA's implementation of TSCA was impeded largely by forces "outside its control" (Woodhouse, 1985:501).

Many adverse judgments about the efficacy of action forcing were made before EPA and other environmental agencies had gained experience enough to make more constructive responses to mandatory deadlines. Stephen Cohen and Mark Tipermas, for example, have noted that EPA's earlier experience with program deadlines led it to anticipate problems in implementing the Superfund legislation of 1980. EPA began planning for Superfund implementation in advance of its passage so well that "it [was] possible to meet statutory deadlines, such as the promulgation of key regulations and the publication of a hazardous waste site response-priority list. Although the Reagan administration halted these efforts, they would have permitted the rapid implementation of superfund" (Cohen and Tipermas, 1983:56). And Jurgen Schmandt has argued that EPA was developing a promising organizational strategy for "integrated environmental management" of high-risk pollutants in response to the difficulties of dealing with single pollutants regulated under many different laws with different compliance deadlines (Schmandt, 1985).

Proponents of action forcing also argue that regulated interests and the regulatory agencies would achieve far less program compliance without the goad of compulsory deadlines—an assertion difficult to prove. Sometimes it is alleged that mandated deadlines give opportunity for proponents of regulation to use litigation as a means of forcing the pace of regulatory implementation. Even if unmet deadlines must be waived or recalculated, so the argument often runs, the threat of judicial intervention in agency decision making encourages a better agency effort at program implementation than would be true without it. Although these arguments usually lack empirical confirmation, they have been persuasive to most environmental activists and their congressional allies.

By the 1990s, however, two decades' experience with environmental legislation had convinced many policy scholars and practitioners that action-forcing strategies are fundamentally and perhaps irreparably flawed by congressional inattention to implementation in legislative design—a failure to integrate the disparate action-forcing provisions of a typical environmental laws into a coherent, strategic plan. The reason, as Cohen and Kamieniecki observe, is that strategic planning confounds the incrementalism of legislative policy making:

> [E]nvironmental regulatory programs . . . are often products of disjointed policymaking. Components of complex policy issues are identified, separated, categorized, and subjected to detailed analysis . . . the "whole" is so fragmented that policymakers and staff have little incentive to consider the "big picture." Rather than worrying about whether a regulatory program will allow an agency to reach a legislative goal, many policymakers strive to improve the efficiency of the regulation development process. (Cohen and Kamieniecki, 1991:11)

But what of citizen involvement as a different kind of "hammer" to compel regulatory enforcement? The citizen involvement programs mandated or initiated in environmental agencies endured a rapid transition from indifference to promotion to decline through the 1980s, leaving their fate indeterminate in the 1990s. Few agencies welcomed the newer forms of citizen involvement in administrative procedures, including intervener funding, citizen workshops on new regulations, and more public hearings on proposed programs (Rosenbaum, 1978; Caldwell et al., 1976). With the exception of the Corps of Engineers and OSHA, most federal environmental agencies provided, at best, indifferent support for these newer arrangements until the Carter administration (Strange, 1972; Cupps, 1977). For a brief period ending with Ronald Reagan's inauguration, the White House gave citizen participation a high priority, indicated by much greater agency resources and efforts expended on citizen involvement programs (Aaron, 1980; Tobias, 1982).

The Reagan administration's aversion to the newer forms of public participation was immediately evident in the thoroughness with which citizen involvement activities at EPA, OSME, NRC (Nuclear Regulatory Commission), OSHA, and the CPSC were practically eliminated within the administration's first six months. The political controversy provoked by early "regulatory reform" at EPA and OSME eventually compelled the Reagan administration to revive—but barely—citizen programs at EPA and OSME (Rosenbaum, 1983). The process of public review and comment required by NEPA for all EISs has been less affected by changing political seasons, and some observers have argued that the procedure has become a durable early warning system for environmental interests concerned with long-term implications of emerging agency policies (Caldwell, 1982:72). Today, the public involvement provisions of NEPA appear to be among the few public participation arrangements of the early 1970s with continuing vitality.

Judgments about the impact of citizen involvement on agency decision making is fragmentary and mixed. Environmental groups had vigorously promoted citizen participation from a conviction they could use it to advantage. During its earliest years, EPA was able to use citizen participation activities to mobilize its environmentalist constituency in support of agency programs. Experiments with intervener funding in administrative proceedings at EPA, as at CPSC and OSHA, were generally judged to be helpful to the agency and valuable to environmental interests (Tobias, 1982). Citizen activities, largely organized through environmental groups, also had a strong influence on the content of numerous state implementation plans formulated in the early 1970s to implement the Clean Air Act (Sabatier, 1975). The Corps of Engineers in the middle 1970s promoted active and influential involvement programs, usually encouraged by environmental interests, in most district offices. Interest in these programs apparently waned in the latter 1970s and remained weak through the Reagan administration.

No environmental legislation written to date contains a more comprehensive provision for public involvement in its implementation than did SMCRA and its regulations. After an ambitious beginning under the Carter administration, however, OSME support for public participation in surface mine regulation at both state and federal levels was severely curtailed in the first Reagan administration and subsequently revived only slightly.

The most important controversy over citizen involvement in the 1990s, an issue of growing urgency for twenty years, concerns the apparently pervasive, increasingly well-organized, and largely successful public resistance to the siting of hazardous facilities now so common it is recognized as “NIMBYism.” The phenomenon arises out of requirements for public notice, hearing, and comment on hazardous facility siting and cleanup. EPA and state agencies implementing TSCA, RCRA, and Superfund, as well as the Nuclear Regulatory Commission, have found it increasingly difficult, and quite often impossible, to gain public acceptance for proposals to site, clean up, or license facilities involving hazardous and nuclear wastes (Mazmanian and Morrell, 1992; Kraft and Clary, 1991).

Many researchers believe NIMBYism threatens to create a regulatory impasse, a deadlock between administrators and the public, abetted by their local officials, in which hazardous facility siting and clean-up is delayed indefinitely. Many agency administrators, among others, believe that public involvement activities have intensified rather than diminished, citizen distrust toward the agencies responsible for hazardous and toxic waste management. The process, they believe, generally makes the scientifically safe location and management of toxic waste sites extremely difficult, despite efforts to gain better public understanding through effective “risk communication” (Plough and Krimsky, 1988). There is considerable evidence that public hearings and other involvement procedures slow the pace of federal and state licensing of toxic waste facilities and the clean-up of Superfund sites. But there is insufficient research to suggest the long-term consequences of NIMBYism and other aspects of public involvement in hazardous waste management. Whether public participation is compatible with the safe and scientific management of dangerous waste still remains an open question.

A New Administrative Agenda

Experience since the beginning of the environmental era now raises some fundamental questions about the appropriateness of the administrative structures and the quality of bureaucratic performance essential to achieve the nation’s environmental goals. These issues, sometimes discussed but more often implied in the literature on environmental administration gradually accumulating since 1970, ought to head an agenda of research issues for environmental administration in the near future. In different ways, they emphasize that the time is ripe to use the inherited experience with environmental administration as a critical tool for appraisal and innovation in the decade ahead.

First, the difficulties in implementing major federal environmental programs since the 1970s are leading many observers to believe that effective environmental regulation requires, perhaps more than substantive changes in environmental laws, a major institutional restructuring of existing environmental agencies. The most commonly cited institutional flaws in the current design of federal environmental regulation are (1) a fragmentation of authority among too many separate and competitive agencies; (2) a tendency to force policy making about major pollutants into a media-based organizational framework that impedes efficient and incisive approaches to many pollution problems involving different media; (3) a need to create institutional structures assuring EPA's regulatory independence from improper White House influence; and (4) the congressional drafting of an EPA charter definitively defining its regulatory priorities and objectives. Clearly, all these issues touch EPA most directly as the nation's major environmental regulatory bureaucracy.

Few of these issues are new. The decision to ignore an EPA charter and to favor a media-based organization were made in the early 1970s, for reasons seemingly persuasive at the time (Marcus, 1991; Landy et al., 1990). The unanticipated, continuing proliferation of new environmental laws has forced reconsideration of an EPA charter while the discovery of cross-media problems such as acid precipitation and toxic substance disposal compels critical reexamination of EPA's media-inspired organization.

The fragmentation problem, most often cited in regulating toxic and hazardous substances, became increasingly evident with the passage of TSCA and RCRA in the late 1970s. The independence of EPA regulatory procedures from excessive political manipulation and partisan intervention assumed major concern under the Reagan administration. This issue vastly transcends environmental affairs, however, because it raises important questions about the proper balance between agency independence and responsibility to the presidency. In broad perspective, it deals with the proper limits of the "administrative presidency" in an environmental context (Nathan, 1983). Nonetheless, the EPA experience of 1981–83 strongly suggests that the agency needs better structural and legal insulation between its scientific decision making and ideological pressures originating in the White House.

Second, the literature on environmental administration is pervasively pessimistic about bureaucratic performance and capacities and seems to unite friend and foe of environmental regulation, otherwise so divided. By the early 1990s, disappointment especially with the regulation of toxic and hazardous substances—"Superfund" had become virtually a synonym for "regulatory debacle"—lead many environmental leaders to concede for the first time that some radical substantive and institutional restructuring of environmental regulation might be imperative (National Commission on the Environment, 1993). Typically, proponents of federal environmental programs enacted since the 1970s tended to impute program failures to bureaucratic rigidities, the political power of regulated interests, congressional meddling in administrative affairs, and (during the Reagan and Bush presidencies) the politicizing of environmental administration through the "administrative presidency." Critics of these programs, though equally likely to cite (different) bureaucratic rigidities for program failure, also commonly blamed the "command and control" philosophy inherent in federal regulatory programs, the power of organized environmental groups, and the federal courts for program difficulties.

Taken uncritically, this tacit consensus about program failures would seem a damning indictment of bureaucracy's role in federal environmental protection and a discouraging omen for the future. Yet, there is empirical evidence that some programs, like portions of the Clean Air Act and Clean Water Act, have improved environmental quality (U.S. EPA, 1988:12–70; 1992a:10–12). Moreover, many program failures may result from insufficient budgetary support, not from bureaucratic ineptitude. Continuing program failure, however, may also signal a fundamental flaw in policy design. In particular, a growing literature suggests that environmental programs should increasingly forsake "end of the pipe" technological fixes and "command and control" regulation in favor of regulatory promotion of waste minimization, cross-media pollution control, and marketplace strategies, such as "emissions trading." A major research challenge of the 1990s will be to define the institutional, statutory, and economic strategies through which such experiments might be implemented within the U.S. environmental regulatory structure and to evaluate the bureaucratic consequences of such change. The Waste Minimization Act of 1991 and the emission-trading provisions of the Clean Air Act Amendments of 1990 provide an early opportunity to examine the impact of alternative policy designs in current U.S. regulation.

Third, the literature of political science and closely related fields such as public administration has only lately begun to make a significant contribution to the understanding of most important issues related to federal environmental administration. The continuing development of this literature beginning in the early 1980s is one of the most important transformations in the research genre of policy studies and public administration to appear in the last several decades. The development of this literature also promises to move the analysis of environmental administration beyond the often partisan, ideologically inspired, and conceptually circumscribed literature by lawyers, economists, former administrative officials, bureaucrats, and policy advocates whose writing dominated environmental administration studies until the 1980s. Recent research like the major institutional studies of the EPA (Landy et al., 1990; 1993; Cook, 1988), the administration of the federal endangered species laws (Tobin, 1990), the Superfund legislation (Mazmanian and Morrell, 1992), and international environmental regulation (Caldwell, 1990; Kamieniecki, 1993) illustrate the growing conceptual sophistication and policy range of such research. The profound challenge implicit in the development of this newer literature is to address issues of genuine administrative importance to the protection and preservation of environmental vitality and to discover the means to communicate these findings effectively.

Finally, it seems important to know if there are institutional "learning curves" in environmental administration. The environmental programs enacted by Congress since 1970 involve many new forms of regulation. The institutions implementing these programs are often new. Precedents and experience give no assistance in designing programs in many instances. The experience of environmental administration in the last several decades needs to be examined with attention to the capacity of institutions to change and innovate in response to experience—an approach that attacks, as well, the prevalent pessimism in much writing about environmental administration. One common criticism of environmental agencies since 1970 is that they are incapable of learning from their own behavior. "Environmental/regulatory agencies were not designed to carry on trial-and-error learning," conclude Eugene Bardach and Robert Kagan (1982:184). Perhaps. The answer to the "learning curve" issue would take us a long way toward sound decisions about the need for institutional reforms in environmental administration. But the literature has yet to appear in satisfactory scope.

These issues are reminders that we are exceedingly early in the environmental era, that we have barely begun to ask the fundamental questions and assemble the necessary information to answer them. At the same time, the issues are a constant challenge to use the existing experience with environmental management more imaginatively and productively.

Some Propositions for Testing

This survey should suggest how ample the opportunities are for research on bureaucracy's impact on environmental administration and how many fundamental issues have yet to be carefully investigated. A number of what can be called "generic propositions" are suggested—broad theoretical issues amenable to numerous modifications and amplifications. Among the more important are the following:

1. On the "environmental impact" process in the federal government:

a. Impact statements are likely to be least effective in traditional mission-oriented agencies, such as the Corps of Engineers or the Federal Highway Administration, where subgovernmental structures and distributive programs are well established.

b. Impact statements are likely to be influential in agency decision making only when strong external oversight of the process is created through judicial, legislative, or White House action.

c. The EIS process has often been more politically important as an early warning system to alert organized interests to the environmental implications of agency decisions than as an influence on substantive agency decisions.

d. As the EIS process has become routinized in federal agencies, environmental interests have come to rely upon other procedures, such as litigation or public involvement activities, to influence environmental agencies.

2. On risk assessment procedures in environmental agencies:

a. Agency determinations concerning the degree of risk associated with potentially hazardous substances or technologies, and regulatory strategies for managing unacceptable risks, are always based upon multiple criteria including economic, political, scientific, and administrative considerations.

b. Regulators select from the many criteria that might be used to justify risk assessment and risk management decisions those that are the most judicially defensible.

c. In administrative risk assessment procedures and judicial review of such procedures, scientists and other technical experts adopt professional opinions in technical controversies that are compatible with their political, economic, or ethical bias on such issues.

d. Scientific data almost never provide enough information to indicate how administrative decisions should be made during risk assessment procedures.

3. On the organization and performance of EPA:

a. The institutional history of EPA will reveal that some programs have experienced a learning curve resulting in greater efficiency and effectiveness of operations over time.

b. The media-based organizational structure of EPA inhibits efficient regulation by creating organizational rigidities and internal pluralistic power struggles that could be diminished through alternative organizational schemes, such as substance-based regulatory units.

c. A major source of regulatory failure in EPA is a chronic insufficiency of financial and personnel resources.

d. The Reagan administration's efforts to achieve regulatory relief at EPA seldom resulted in significant savings of money or more efficiency in regulation.

4. On the regulatory reform of environmental programs:

a. Under the Reagan administration, the President's Office of Management and Budget became an institution of continuing importance in the substantive writing of environmental regulations and other policies in federal environmental agencies.

b. Benefit-cost analysis was not an important consideration in the writing and revision of environmental regulations during or after the Reagan administration.

c. The displacement of influence and authority from federal to state environmental agencies in implementing federal environmental regulations, initiated by the Reagan administration, has continued into the 1990s.

d. Continuing research in risk assessment, environmental monitoring, ecological interdependences, and other environmental regulatory problems has created a growing regulatory science base that is highly disruptive to regulatory programs based on earlier, less adequate scientific data.

e. Risk-based environmental regulation, cross-media pollution abatement, and waste minimization as principles of regulatory policy design cannot be implemented effectively within the present institutional framework of U.S. environmental regulation.

f. Market-based approaches to regulation, such as "emissions trading," are more effectively implemented and more efficacious in achieving regulatory goals than nonmarket approaches.

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9

The Courts and Environmental Policy

Lettie McSpadden

At the beginning of the environmental decade, environmental activists made the conscious decision to take their demands to court. Many groups that lobbied Congress for new public laws controlling pollution and conserving natural resources believed they needed to monitor the administration of those laws and wrote into them provisions for citizen suits to help enforce the substantive requirements. Recognizing the success that economically powerless groups, such as civil rights activists, had had in the judicial arena, many attorneys with environmental values argued that the courts offered the most promising forum for achieving their policy goals (Sax, 1971; Landau and Rheingold, 1971).

Since that time critics have argued that courts are peculiarly unsuited for making the trade-offs necessary for comprehensive policy formulation (Glazer, 1975; Horowitz, 1977; Melnick, 1983). Liberal critics have argued that it wastes resources to take such issues into court, and judicial decisions often do not have the intended effect on policy (Rosenberg, 1991). Alternative methods for resolving environmental conflicts, such as mediation, have been recommended by many analysts on the grounds they are less expensive, time-consuming, and conflictual (Lake, 1980; Susskind et al., 1983; Harter, 1982).

Supporters of courts as policymakers, however, contend that courts are especially suited to uphold principles and values that are often lost sight of in the political arena (Chayes, 1976; Stone, 1974; Zemans, 1983). Moreover, some judges, as well as scholars of court processes, argue that judges are becoming more capable of administering new policy and finding compromises through mediation (Wald, 1985). Some of them are skeptical regarding the outcome of negotiated settlements especially when the parties are not equally powerful (Fiss, 1984; Amy, 1987). It is the purpose of this chapter to examine the record of environmental policy making in the courts for the last twenty years and to suggest some additional types of research that might be undertaken in the future.

Modes of Judicial Research

Analyses of the judicial process in the United States are divided into two major categories. Traditional substantive interpreters of the law emphasize developing areas of law, many advocating a particular normative position regarding a given legal question. Because of its developing nature, environmental law has been subject to a great deal of interpretation by legal scholars from the 1970s to the 1990s. In these decades many law journals have been established that publish in the subfields of environmental law and natural resource management. Most of the research reviewed in this chapter falls into this category of substantive interpretation of landmark cases or categories of decisions defined by fairly narrow environmental topics.

In addition to explaining legal doctrine, nonenvironmental legal scholars have focused on the impact that court decisions have had on specific public policies (Johnson and Canon, 1984). These researchers have directed attention to landmark Supreme Court cases dealing with school desegregation (Rodgers and Bullock, 1972), defendants' rights (Canon, 1977), abortion (Epstein and Kobylka, 1991), and other civil liberties issues. A few environmental legal scholars have begun to follow this tradition, especially those interested in the impact of the National Environmental Policy Act (Anderson, 1973; Andrews, 1976; Liroff, 1976) and the Clean Air Act (Melnick 1983).

Another group of scholars has, since the 1950s, attempted to explain and predict judicial behavior based on theories developed in other parts of the social sciences, such as voter behavior and congressional policy making. Many have directed their research toward individual justices of the U.S. Supreme Court and have postulated that public policy preferences of the justices who have served on that court have been crucial in determining outcomes (Pritchett, 1948; Schubert, 1965; 1974). Others have argued that judicial philosophy or role theory (judges' understanding of the degree of restraint they should show for elected policymakers) influences their decisions (Gibson, 1978).

Students of judicial behavior have gone beyond demonstrating the consistency of individual judges' attitudes and have attempted to explain the origins of those values. Some have focused on the backgrounds from which justices and judges have come, demonstrating that Democratic judges and those with demographic profiles similar to Democratic voters tend to decide cases more liberally than do their Republican counterparts (Nagel, 1961; Ulmer, 1985). Others have attempted to show that method of judicial selection (Watson and Downing, 1969) and especially the ideology of presidents who appoint judges is important in determining future court policy (Carp and Rowland, 1983).

In addition to variables at the individual judge level, other explanations have been suggested for variations in judicial policies. Small-group dynamics among judges on collegial courts appear to influence some judicial decisions (Murphy, 1964). Litigants and attorneys and their resources and strategy in litigation may have an impact on judicial outcomes. Some research has been done on specific interest groups' effects on policies made by courts, especially regarding civil rights (Vose, 1959; O'Connor, 1980). Other researchers have also pointed to the increased use of the courts by public interest groups (Orren, 1976), economic interest groups (O'Connor and Epstein, 1982), and environmental groups (Cook, 1980; Wenner, 1983). The socioeconomic and political context in which judges make their decisions has been shown to have some influence over outcomes, especially in civil rights cases (Giles and Walker, 1975) and draft protestor cases (Cook, 1977; Kritzer, 1978). Environmental cases' outcomes also appear to vary depending on the region in which the case is decided (Wenner, 1980). Despite the few exceptions, however, judicial behavioral studies have not been systematically linked to environmental legal doctrine. The latter has been extensive, however, and it is to that doctrinal analysis that we now turn.

Traditional Legal Research

The judicial branch has long been known as the third branch of government because its nonelective nature has relegated it to a position subordinate to the legislature and executive in a democratic political system. Yet judges' power to say "what the law is" (*Marbury v. Madison*, 1803) enables courts to overturn legislative actions whenever they offend the Constitution and to reverse administrative decisions whenever agencies abuse the power delegated by statute law. The law-defining power of the courts has long been a subject for controversy in our democratic society. Two forms this argument takes are (1) a discussion about judicial restraint in applying constitutional principles and (2) deference to administrative discretion in interpreting laws.

In an administrative state, where technical expertise in policy areas such as the environment is crucial to understanding issues and making decisions, an increasingly large degree of policy-making power has been delegated to administrative agencies not necessarily any more responsive to direct political control than courts. Legal commentators are divided in their opinion as to how much oversight courts should exercise over administrative discretion and how much freedom should be given to the experts who occupy administrative positions. One judge who served on the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit, Harold Leventhal (1974), argued during the 1970s that it was the courts' responsibility to guarantee that agencies take a "hard look" at all factors that should be considered when making their decisions. For agencies whose primary mission is distributing benefits or constructing public works, this hard look should emphasize environmental variables. Judges who succeeded Leventhal on the D.C. Circuit in the 1980s, such as Robert Bork and Antonin Scalia, who was later appointed to the Supreme Court, tended to favor more administrative autonomy and less interference from the public with executive decision making.

NEPA Cases

The discussion about how much judicial review of administrative discretion is appropriate often takes place within the context of the National Environmental Policy Act (NEPA). In passing this law, Congress attempted to reduce the tendency of nonenvironmental agencies to overlook environmental values in making decisions. Formulators of NEPA hoped to achieve this result at two levels: through internal reform, by forcing agencies to incorporate environmental values into their thinking, and through external oversight, by informing the public and other agencies about projects under consideration and eliciting comments from them. Evaluation of the effectiveness of NEPA has been mixed. Some observers have argued that writing environmental impact statements (EISs) for government projects has merely lengthened a process without making any substantive impact (Fairfax, 1978). Other have observed some reform of the system (Liroff, 1976; Mazmanian and Nienaber, 1979).

It is at the second level, external reform, that the courts enter the process, because NEPA provides for citizen suits through which groups dissatisfied with the EIS process may sue any government agency for shirking its duty. Many who have analyzed the courts' impact argue that only the courts' insistence on strict application of the law in the early days of NEPA forced many agencies to write EISs at all, and to take seriously the information contained in them (Andrews, 1976; Liroff, 1976; Anderson, 1973). During the 1970s various federal courts struggled with procedural questions regarding NEPA: what constitutes a "major federal action" requiring an EIS, who should write it, when it should be written, and what kinds of projects are exempt (Claff, et al. 1977; ABA Environmental Quality Committee, 1978).

Starting in the late 1970s, however, most commentators noted a narrowing of the meaning of NEPA by Supreme Court precedents. In *Kleppe v. Sierra Club* (1976), the Supreme Court decided that an EIS is not required until there is some final federal action to review (Koshland, 1978). This decision reduced substantially the precedential value of *Calvert Cliffs v. AEC* (1972), through which the D.C. Circuit had influenced many agencies to prepare EISs early in order to use those documents in planning. *Kleppe* also reduced the scope of EISs because it allowed the Department of Interior to write small EISs for each area to be strip-mined without considering the cumulative impact of many such projects in one region. Some commentators, including dissenting Justice Marshall, objected on the ground that if courts cannot control agency discretion until the project reaches its final stages, it will be too late to influence the vital planning process (McGarity, 1977).

In *Andrus v. Sierra Club* (1979) the Supreme Court continued to narrow the scope of NEPA by agreeing with the executive branch that the budget process was exempt from EIS requirements regardless of its impact on the environment (Shortsleeve, 1981). Two decisions, one each in the First and Second Circuits, allowed the leasing of sites in the outer continental shelf without considering the impact of oil production at those sites and were regarded as setbacks for the environment (Fryer, 1979; Kameron, 1978). In *Defenders of Wildlife v. Andrus* (1979) the Ninth Circuit and later the D.C. Circuit concluded that a federal agency does not have to write an EIS when it considers whether or not to regulate state or private action with significant environmental impacts that it could legally control (Marek, 1980).

The single NEPA case that has generated more commentary than others is *Vermont Yankee v. NRDC* (1978) in which the Supreme Court overturned two D.C. Circuit decisions remanding Nuclear Regulatory Commission (NRC) decisions for inadequate treatment of environmental issues. Writing for a unanimous Supreme Court, Justice Rehnquist chastised the D.C. Circuit for interfering with NRC discretion and inserting its own policy preferences for that of an expert commission. Later the court issued two additional decisions, *Strycher Bay v. Karlen* (1980) and *Baltimore Gas & Electric v. NRDC* (1983), which made it even clearer that the high court considers

NEPA's EIS-writing as a procedural requirement that requires no substantive content (Rubin, 1980). In *Metropolitan Edison Company v. People Against Nuclear Energy* (1983) the Supreme Court ruled that no EIS was necessary to discuss the psychological effects on residents near the disabled Three Mile Island plant when the second unit was reactivated (Jordan, 1984).

Many comments in environmental law journals have tended to agree with Judge Bazelon's original D.C. Circuit decision in *Vermont Yankee* that would have required NRC to develop a complete record for courts to review in which intervenors would have been permitted to insert more of their substantive information opposing that of the agency (Raymond, 1979; Stewart, 1978; Edwards, 1980). Others agreed with the Supreme Court's reprimand to the D.C. court for interfering with the NRC's discretion and expertise (Byse, 1978; Breyer, 1978). One study attributed the decline of the nuclear industry partly to the ability of environmental groups to manipulate the judicial process in order to delay the permitting process and raise the costs of nuclear power (Cook, 1980).

Whatever their policy preference, however, commentators are in agreement that the net impact of *Vermont Yankee* has been to reduce the strictness with which NEPA is utilized to criticize agency actions. Some would remedy this situation by allowing other adminstrative agencies to oversee agencies writing EISs—a policy suggestion first made and rejected when NEPA was being formulated (Liroff, 1976). Others would free lower federal courts from the strict procedural interpretation given NEPA by the Supreme Court (Davis, 1980; Goldsmith and Banks, 1983).

Commentators in the early 1970s agreed that the federal courts' interpretation of NEPA expanded its meaning and increased public oversight of government actions. After the Supreme Court dampened lower federal courts' earlier enthusiasm for reviewing the substance of EISs, NEPA cases dropped off. Nevertheless environmental groups continued to use NEPA in combination with other legislation such as the Endangered Species Act to delay actions in the federal government and provide time for an administrative agency to review its decision.

In some cases this tactic backfired, as when California and the Natural Resources Defense Council challenged the Forest Service's plan for dividing its remaining roadless areas into wilderness or multiple-use lands. A federal judge in California issued an injunction against the Forest Service to force them to write another EIS about their decision (*California v. Bergland,* 1982). By that time, however, the administration had changed, and the new head of the Forest Service decided to review all designations of wilderness areas and increase the areas selected for development (Scott, 1984). It is possible for a procedural victory to be converted to a substantive defeat.

On the other hand, some delays created through NEPA litigation have afforded an opportunity for more proenvironmental decisions. This happened in the dispute over old-growth forests in the late 1980s (Bonnett and Zimmerman, 1991). In 1990 the Sierra Club succeeded in getting the Fish and Wildlife Service to declare the northern spotted owl a threatened species through an Endangered Species Act lawsuit (*Northern Spotted Owl v. Hodel,* 1988). The Audubon Society argued subsequently that since the owl needs old growth for habitat the Forest Service must write a new EIS before it can allow clear-cutting in large segments of the national forests in Washington and Oregon.

Although Congress took away judicial authority in these cases in 1989 and 1990, several injunctions to stop the Forest Service from clear-cutting were issued during 1991 and 1992 (*Seattle Audubon Society v. Evans,* 1991, and *Portland Audubon Society v. Lujan,* 1992). In 1993 the Clinton administration decided to hold a timber summit and rethink policy regarding the old-growth forests in the northwestern United States. Although the final result may not be optimal from conservationists' perspective, still the injunctions saved thousands of acres of forest temporarily and afforded an opportunity for the issue of biodiversity to be discussed on its own merits beyond the context of the spotted owl.

Water Pollution Cases

Pollution control laws differ from NEPA in the important sense that they are not directed primarily at polluting activities of the federal government. Rather they give to the Environmental Protection Agency (EPA) authority to control private and state activities to reduce their polluting effects. The Clean Water Act (formerly the Federal Water Pollution Control Act) originally set very ambitious goals; making the waterways of the United States "swimmable and fishable" by 1983 and free of any man-made pollutants by 1985. These goals, however, were gradually relaxed, first by the courts and later by Congress throughout the 1980s. Those who agree with such changes argue that they reflected a recognition of the need to consider the high costs to society of pollution control. Critics believe they represent an erosion of our commitment to public health goals. Whatever one's policy preference, however, it is generally agreed that fine-tuning the law struck a new balance between economic and environmental values.

Eight years of litigation in the 1970s over Reserve Mining's dumping of taconite tailings into Lake Superior resulted in several decisions rendered by different federal and state courts and illustrates many of the problems of administering the Clean Water Act. The author of one case study concluded that the end of the case, a settlement worked out between the state of Minnesota and the corporation, was a classic case of balancing concern for public health with the economic well-being of several communities and their industry (Bartlett, 1980). Another study, financed by the industry, examined the same convoluted history and concluded that the on-land disposal solution agreed to by the court was not worth the cost to the company (Schaumberg, 1976). A third author, a former EPA lawyer who had been involved in the litigation, interpreted the dismissal of the judge who had been sympathetic to public health arguments, and the refusal of the Justice Department to continue the case, as evidence of industry's capacity to influence the judicial process (Bastow, 1986).

Enforcement of the Clean Water Act occurs in two phases. In the first EPA sets effluent standards for each industry based on current pollution reduction technology. In phase two EPA or an EPA-authorized state agency issues a National Pollution Discharge Elimination System (NPDES) permit to each point source (municipal sewage treatment plant or industrial plant) specifying the percentage reduction required for each pollutant and the deadline for its achievement. In addition, variances may be granted to each source that may postpone the deadline by which the reduction in pollution must be achieved or reduce the requirement altogether (Rodgers, 1977; Schoenbaum, 1981; Findley and Farber, 1991).

Industry has challenged the discretion of EPA before federal courts at all of these stages. Industry attorneys began with procedural challenges, arguing that EPA had not provided an appropriate hearing or sufficient notice to interested parties to comment on the regulations. EPA was able to meet these challenges primarily by slowing its processes (McKinnon, 1979). Substantive challenges by industry were more difficult to meet, as all federal circuits insisted EPA demonstrate in its administrative record that it had taken Leventhal's "hard look" at all the legally relevant factors for setting effluent standards. The standards for old sources of water pollution were divided by the 1972 amendments into two levels, "best practicable" and "best available." The former was designed to be less strict and to require that the agency balance the cost to industry against the demonstrated benefits to the community brought about by cleaner water. In setting best available treatment, EPA had only to consider cost along with other factors (*Appalachian Power v. Train*, 1976).

In *Dupont v. Train* (1977) the Supreme Court also required EPA to provide for variance procedures for both best available and best practicable treatment permits; only new source performance standards (NSPS) were to be exempt from the variance procedure (McKinnon, 1979). In 1977 Congress amended the Clean Water Act to replace the best available technology with conventional and nonconventional treatment; only toxic pollutants are to be subject to best available treatment. EPA, however, has been slow to identify any pollutants as toxic and only agreed to name a few in order to settle a lawsuit against it by the Natural Resources Defense Council (*NRDC v. Agee,* 1976). Recent industrial challenges have been made to EPA's database and its lack of understanding of the engineering problems in treatment processes. The decline in EPA administrative and research capacity in the 1980s gave industry's challenges based both on economic costs and technical incapacity even greater credibility in court.

One unexpected side effect of the complex system of permits or point sources of water pollutants is that it appears to have eliminated recourse to earlier federal common law remedies available to people injured by pollution in the past. In *Illinois v. Milwaukee* (1972) the Supreme Court appeared to give credence to the concept that individuals injured by pollutants that met current legislated standards would still have recourse to common law if they could demonstrate injury (Leybold, 1978). After several federal circuits utilized this precedent to find a common law remedy in some cases (Weiland, 1980), the Supreme Court reversed the Seventh Circuit in *Illinois v. Milwaukee 2* and declared that the 1972 amendments to the Clean Water Act covered the subject of water pollution so comprehensively there was no need for any federal common law. At least one disapproving commentator argued that this misconstrued Congress's intent and gave legal imprimatur to actions that might have been illegal before the passage of the Clean Water Act (Collins, 1984). Thus Milwaukee could obtain multiple variances from the state of Wisconsin for repeated sewer overflows without any remedy for downstream users because it possessed a valid permit to discharge. Collins (1984) argued that Congress ought to put back into the Clean Water Act by amendment what the Court had eliminated through interpretation.

In 1981 commercial fishermen attempted to obtain damages for sewage that had reduced their ability to earn a livelihood, but the Supreme Court decided they had no private cause of action under the Clean Water Act (*Middlesex County Sewerage Authority v. National Sea Clammers,* 1981). Neither the federal common law of tort nor the regulatory scheme devised by Congress appears to afford relief to individuals suffering property loss due to water pollution (Bleiweiss, 1983). Formerly, private parties had used section 1983 of the Civil Rights Act to assert rights given them under the Constitution and other federal laws. The Supreme Court's ruling in *Middlesex* appears to eliminate this protection for any laws with enforcement mechanisms unless Congress writes in a specific savings clause. Critics of the case argued that withdrawing previous protection should require an affirmative act by Congress ("Private Right," 1983).

On the other hand a development that has increased public participation in water pollution control is the citizen suit in which public interest groups such as the Sierra Club sue directly an industry that is out of compliance with its effluent permit. Formerly, most environmental litigation involved a government agency that was sued either by industry or environmental groups. However, during the 1980s, as enthusiasm for enforcement actions waned in the agencies, public interest groups took up the slack (Vaughn, 1991). Congress cooperated by providing for citizens' suits in the laws, which enable private citizens to act as private attorneys general. The fact that all point sources must have permits for discharging to waterways greatly facilitated these lawsuits, as reports monitoring effluents are required and provide specific evidence of noncompliance that courts can easily accept. The Supreme Court interpreted the Clean Water Act to prevent citizens from suing for violations that have been corrected (Wolter, 1989). Even though industry may avoid a fine, a citizen suit may either encourage EPA or a state agency to initiate enforcement action or convince the company to bring its plant into compliance with its permit. Either of these outcomes accomplishes the purposes of the suit.

Like other environmental statutes, the Clean Water Act provides for criminal penalties, both fines and incarceration, for violations of its regulations, but little effort was made to use these criminal sanctions until the 1980s. In 1981 EPA established its Office of Criminal Enforcement and ten regional investigation offices, and by 1983 it had begun referring prosecutions to the Department of Justice. The latter established a new Environmental Crimes Section (ECS) within its Environment and Natural Resources Division after some dispute over whether it should be placed in the Criminal Division. Lawyers who have been involved in this program since its inception argue that it has been effective and is likely to prove more so in the future (Starr, 1991; Strock, 1991). They believe that major corporations do not mind paying civil fines, as the costs can simply be incorporated into the company's business expenses. These law enforcement officials believe that the level of fines should be calculated to exceed the amounts of money corporations save by not complying with the law. They also believe that some corporate officers should be held personally responsible and sent to prison in order to impress the business community with the serious intentions of the government (Strock, 1991).

Some practitioners admit there have been start-up problems. Bureaucratic conflict exists within EPA between the field and headquarters, and between EPA, which had been accustomed to administering the law through civil fines, and the Justice Department, which focuses on criminal investigations (Starr, 1991). Moreover, within the Justice Department there has been considerable conflict over criminal enforcement. In 1992 a congressional oversight committee found that six criminal prosecutions begun in the field by various U.S. Attorneys who were asked to prosecute by EPA were withdrawn or settled in Washington by their ECS superiors for political reasons (*EPA's Criminal Enforcement Program,* 1992). For example, in 1990 Weyerhauser pleaded guilty to five misdemeanor charges and paid a $500,000 fine for violating its NPDES permit, thus avoiding a felony indictment. In 1994 the Justice Department investigated the operation of ECS and concluded that distrust pervaded the relationship between the field offices and headquarters during the Reagan and Bush administrations, but that steps had been taken to reduce those tensions since 1992 (*EPA's Criminal Enforcement Program,* 1992). A 1993 amendment in the U.S. Attorneys' manual now allows the field to initiate some routine prosecutions without referring them first to Washington (*Internal Review of the Department of Justice Environmental Crimes Program,* 1994). Nevertheless, conflict continues to exist about whether a given case is exceptional and deserves review by Washington before an indictment can be made.

Critics of the program argue that the number of referrals to Justice was small throughout the 1980s, and the number of successful prosecutions even smaller. Few large corporations were involved in such suits, and the resulting fines were minimal when compared with the maximum provided by law (Adler and Lord, 1991). An example occurred in 1990 when the United States indicted the Exxon Corporation for fouling the waters of Prince William Sound with eleven million gallons of crude oil in 1989. Exxon subsequently pled guilty in a plea bargain and agreed to pay $100 million to the United States, and $50 million to Alaska (Adler and Lord, 1991). These critics argue that the system of criminal penalities needs to be stiffened and enforcement increased. Other analysts caution about the civil liberties implications involved in criminalizing more behavior in the United States. They hope to convince the business community to comply voluntarily with environmental controls and reduce resistence to the laws through education (Hedman, 1991).

Although most identifiable point sources of water pollution are now under permit, the water quality goals originally set in 1970 have not been achieved. In 1987 the Clean Water Act was amended to give greater attention to nonpoint sources: runoff from agricultural fields, including pesticides and fertilizers, and runoff from urban sources, such as construction sites and pavements. Since it is impossible to treat such effluents before they enter the waterways, emphasis is placed on planning land uses to keep pollutants such as silt from land erosion from entering the rivers and lakes (Mandelker, 1989). Because land use control is primarily a state power, some analysts advocate putting pressure on local authorities to consider more carefully the cumulative impact of multiple developments in their jurisdictions (Buresh, 1986). Others argue for the U.S. Department of Agriculture's Soil Conservation Service to take a more active role by influencing farmers to adopt best management practices to control erosion (Davidson, 1989).

One defense against nonpoint source pollution are wetlands that serve as barriers and filters between the land and waterways. Under the Clean Water Act, the Corps of Engineers and EPA share authority for issuing permits to fill wetlands, which has led to major conflicts within the government (Nerikar, 1990). Despite the fact that wetlands were originally regarded as a public health hazard, some effort is now being given to preserving some of the remaining wetlands in this country. However, most commentators remain critical of the program to restrict filling wetlands for development even though courts have tended to uphold the government when it has refused to issue permits (Griswold, 1990). The Corps and EPA lack sufficient personnel to adequately police around one hundred million acres of wetlands that remain in the United States (Addison and Burns, 1991). There is still no government-wide agreement on the definition of a wetland, which became a major controversy at the end of the Bush administration (*Federal Manual,* 1989). Moreover, the Clean Water Act requires a permit only for filling—not for draining—a wetland, which means that the only line of defense in most farmland is the Soil Conservation Service's program to protect wetlands (O'Hagan, 1991). As in the case of wilderness preservation there will be additional debate and litigation about this issue in the immediate future.

Hazardous Waste Cases

One of the major problems of water pollution not covered by the Clean Water Act is groundwater contamination, which stems from a number of sources: spraying commercial poisons to control pests in agricultural and residential areas; injecting toxic wastes into deep wells; and leaking landfills where toxic liquid and solid wastes were frequently deposited together in the past. The laws designed to address this problem most directly are the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA).

RCRA provides for tracking hazardous wastes from their generation through their transportation and disposal at special landfills designed to contain and monitor the leachate from these sites for thirty years. Few of the framers of the legislation believed in 1976 that monitoring toxic liquids left in metal containers underground for a limited time would solve the problem of contaminating the groundwater, and RCRA was substantially revised by the Congress in 1984. RCRA now emphasizes reducing the production of toxic wastes and incinerating and treating them chemically rather than disposing of them in or on the land. The D.C. Circuit upheld EPA's 1988 ruling on land disposal against an industrial challenge in *American Petroleum Institute v. U.S.*, 1990. The 1984 amendments also addressed the problem of leaking underground storage tanks containing such hazardous materials as petroleum products and pesticides (Findley and Farber, 1991).

Two major problems remain. Communities have become increasingly reluctant to host hazardous waste facilities because of publicity about leaks from abandoned waste disposal sites such as Love Canal (Wolf, 1980). Many states and localities have responded by simply refusing to allow any new hazardous treatment or disposal facilities to be located in their jurisdictions. Spokespersons for the disposal industry argue that a central authority (federal or state government) should be empowered to override local objections to new sites because toxic wastes are being produced at increasing rates. Others also concerned about the availability of storage space for toxic wastes argue that arbitration between developers of disposal sites and local authorities should be developed, as in the state of Massachusetts (Bacow and Milkey, 1982). Alternatively, or in addition, states might cooperate by forming interstate compacts and selecting regional sites for the most hazardous wastes, as they are doing for low-level radioactive wastes (Florini, 1982). At present there is an impasse between those who seek new sites and others who prefer to find alternatives to land disposal.

RCRA provides criminal penalties for anyone who knowingly transports, treats, stores, or disposes of hazardous wastes illegally. As in clean water cases, there has been criticism of EPA and the Justice Department's handling of criminal prosecutions for hazardous dumping. In 1987 PureGro, an agricultural products company, dumped liquid waste containing pesticide residues in a field near Pasco, Washington, injuring residents in the area. ECS forced the U.S. Attorney to drop all charges, but eventually allowed the company to plead to one misdemeanor count and pay a $15,000 fine (*Internal Review of the Department of Justice Environmental Crimes Program,* 1994).

Under CERCLA (Superfund) the U.S. government was charged with identifiying and cleaning up abandoned hazardous waste dumps that constitute a threat to public health. The initial EPA response to CERCLA was to dig up buried hazardous waste and move it to new locations. This policy of relocating old dumps seemed likely to create future Superfund sites (Office of Technology Assessment, 1983). Recent modifications to RCRA and a reluctance to continue landfilling hazardous wastes is changing this policy to treating the contaminated soil in situ rather than moving it.

After clean-up is achieved—however that is accomplished—CERCLA provided that costs of clean-up should be recovered from those who owned the site and/or profited from its operation. CERCLA left two major problems unaddressed. One was whether strict liability should be assigned for contributing to hazardous dumps, and the other was how this liability should be distributed among the several responsible parties (past and present owners of the site, producers and haulers of waste to the site). After Congress dodged these problems because of differences between the Senate and House about how strict the law should be, the federal courts were called upon to address these issues. They ultimately applied strict liability, which means there is no need for the government to demonstrate negligence or intent to do harm by the responsible parties. The courts also assigned joint and several liability to all contributors to the problem over the protests of industry (*U.S. v. Monsanto,* 1988, and *U.S. v. Northeastern Pharmaceutical & Chemical Company,* 1986). Under this rule the government is able to recover its costs for cleaning up such abandoned sites from any party it can prove contributed to the damage ("Joint and Several Liability," 1982). Commentators who urged this interpretation on the courts argued that it is not possible to apportion responsibility for specific parts of the damage because of the mixed nature of the hazard. Applying joint and several liability places the burden of demonstrating that damages can be divided among multiple parties on the defendants rather than forcing the government to show that the damage is indivisible (Luster, 1982/83). As a result there are many civil suits in court now among industries and insurance companies about who should pay how much of the costs of clean-up at various sites.

The courts' liberal interpretation of liability has resulted in banks, other lending institutions, and some city governments' becoming responsible for the wastes on property they acquired through default on loans or nonpayment of taxes. Congress addressed this problem in 1986 when it passed the Superfund Amendments and Reauthorization Act of 1986 (SARA) and included an "innocent party" provision to the law (Leifer, 1989). However, the fear of prospective liability has made all lending institutions, not to mention investors, more cautious about the inspections they give properties on which they lend money (Rohrman and Hoffman, 1989).

Another major gap in the comprehensiveness of CERCLA was the lack of any statutory remedy for persons suffering personal injury from abandoned waste sites such as Love Canal (Trauberman, 1983). Some commentators argued that because of the Supreme Court's rulings in water pollution cases, there could be no development of federal common law in this area either. Victims would have to rely for any recovery on the varied liability rules of different state laws (Dore, 1981; Hinds, 1982). Other legal writers argued that strict liability should be applied by state courts in personal injury cases stemming from abnormally dangerous activities, that is, nonnormal land uses in inhabited areas (Baurer, 1980). Admittedly, however, state common law varies on this subject, and it will be difficult to establish a uniform common law throughout the United States without using federal common law (Dore, 1981).

The Emergency Planning and Community Right to Know Act is Title III of SARA. It was added to CERCLA in order to provide local government emergency response agencies with information about chemical hazards present in their communities. It requires all owners and operators of all manufacturing plants and other facilities that use such materials to inform the state authorities about these materials and to report any accidental releases of such chemicals outside the plant (Blomquist, 1990).

Clean Air Cases

The Clean Air Act represents a regulatory scheme similar to that under the Clean Water Act with certain exceptions, the most important of which is the law's reliance on ambient air quality standards rather than emission treatment standards. National ambient air quality standards (NAAQS) were set by EPA after passage of the 1970 amendments of the Clean Air Act, and a multilayered method of achieving them was devised. Emissions from mobile sources (cars, trucks) are regulated nationally, but only major new stationary sources are regulated at the national level. State agencies control stationary sources that predated the Clean Air Act under state implementation plans (SIPs), which vary with the ambient air conditions where they apply (Findley and Farber, 1991).

One issue raised early in the Clean Air Act's implementation was whether areas that were already in compliance with NAAQS were subject to regulation. EPA interpreted the 1970 Clean Air Act amendments to apply only to nonattainment (dirty) areas (Walker and Storper, 1978). Landmark litigation in the D.C. Circuit (*Sierra Club v. Ruckelshaus,* 1972) forced EPA to develop regulations to control emissions in attainment areas. This decision survived on appeal when the Supreme Court, missing one justice, divided evenly on the vote to uphold (*Fri v. Sierra Club,* 1973). Later these regulations were incorporated into the 1977 amendments to the Clean Air Act and gave rise to two different enforcement strategies depending on whether the air in a region was clean or dirty. Both involved the location of new sources of pollution. Siting major new sources in attainment areas depends on a review process to "prevent significant deterioration" (PSD) that shows the new emissions will not push the area over the increments in pollutants allotted to it. According to the original 1970 Clean Air Act, if nonattainment areas did not reach NAAQS by 1977, EPA could prevent new industrial plants from locating there. To avoid this unpopular result, industry convinced EPA in 1976 to adopt the concept of offsets—trade-offs that enable a new source to add to the pollution load in a dirty area by getting an old source in the same area to reduce its pollution load a greater amount (Landau, 1980b).

Economists have long argued that pollution control can be achieved most efficiently by allowing industry to reduce easily treated emissions extensively in exchange for little or no treatment of emissions that are expensive to treat. Acceptance of offsets or trading pollution rights among two or more sources by EPA and the courts was one method of accommodating such economic theory to the regulatory system of the Clean Air Act (Pedersen, 1981). Another example of the usefulness of economic theory to pollution control is the concept of a bubble placed over a single industrial plant. Originally, a stationary source of air pollution was defined to mean one smokestack, furnace, or other point source. Critics of the system, however, argued that such a definition tied industry to a fixed technology defined by EPA as the best available and eliminated the possibility of finding innovative methods for treating pollutants. Instead they favored considering entire industrial plants as one source and allowing for an increase in pollution from one part to be compensated for by phasing out or diminishing the emissions from another part of the "same source," through the idea of a bubble placed around the entire factory (Landau, 1980b).

When EPA attempted to apply the bubble concept to modifications of old stationary sources in nonattainment areas environmental groups objected, and the D.C. Circuit struck it down on the grounds that the Clean

Air Act did not allow for such a definition of "source" (*ASARCO v. EPA*, 1978). Nevertheless, EPA went on to apply the bubble idea to old sources in attainment areas, and in *Alabama Power v. Costle*, 1979, the D.C. Circuit explicitly agreed to this strategy for old sources in clean areas, although it maintained its ban against using the bubble in dirty areas (Del Calvo y Gonzalez, 1981). In 1984, however, the U.S. Supreme Court in *Chevron U.S.A. v. NRDC* decided that EPA had discretion to use bubbles wherever it chose—in attainment or nonattainment areas.

Thus an old plant in a clean area could add components to its facility without going through the PSD review process or applying the best available pollution controls to it, as long as an equivalent reduction in pollutants was achieved somewhere else in the facility. Some environmental critics felt that while the bubble was legitimate for clean areas, it should be prohibited in nonattainment areas because of the threat to human health that was not diminished by simply maintaining the status quo ("EPA's Bubble," 1980). Others opposed the notion of bubbles altogether as affording industry a way out of applying the latest pollution control technology to its modified plants, thus retarding the improvement of air quality around the country (Rodgers, 1977). The 1977 amendments to the Clean Air Act, however, ratified the concept of trading off reductions in old emissions for new ones, and in 1979 EPA wrote regulations allowing industry to "bank" emission rights for later use if a new source was not available to use them at the time an old source was retired (Hahn and Hester, 1989). Thus the trend in all three branches of government has been to liberalize the definition of source and provide for trading emission reductions for increases both within the same industrial complex and among facilities.

In addition to accepting the bubble concept, in *Alabama Power v. Costle* the D.C. Circuit took a very hard look at other EPA regulations about attainment areas and made several modifications, most of which favored industry. Prevention of significant deterioration (PSD) is based on the idea that clean areas should, in fact, be allowed to gradually increase their pollution levels, based on the air quality in the region on a given date. Originally, EPA wanted this date to be uniform throughout the country, but the D.C. Circuit ruled that each area could have a unique baseline date depending on when the first major new pollution source applied for a permit. "Major source" was defined by the court as a plant emitting at least 100–250 tons of pollutants per year, calculated according to how much the plant can emit, with controls in place, operating a limited workday—rather than the physical potential for all emissions, on which EPA had based its regulations (Floy, 1981).

It is the responsibility of EPA to develop new source performance standards (NSPS) for all major plants within each industrial type. All of the NSPSs have been challenged when developed by EPA, just as Clean Water Act regulations were. Among the most controversial were those developed for new fossil-fuel-fired electric power generators. In 1979 EPA settled on a strategy that required all major new generators to scrub the emissions from their stacks to reduce sulfur oxides on a sliding scale. This was accomplished only after an intense debate within and outside the agency over whether all emissions should be reduced equally (Ayres and Doniger, 1979) or whether a sliding scale should be developed, depending on the sulfur content of the coal (Badger, 1979). The latter strategy was accepted and was criticized by some as being too responsive to industry pressure (Banks, 1981) and by others as too harsh and economically inefficient (Ackerman and Hassler, 1981). The proindustry critics argued that more sulfur reduction could be achieved less expensively by allowing the industry to determine its own strategy (substituting lower sulfur coal, for example). Agency spokespersons countered with arguments about the accuracy of the analysis of the critics and the difficulties of policing different control techniques (Smith and Randle, 1981). Both sides hoped that the judiciary would force EPA to revise its strategy to favor their interest: either to restrict industry further or to give it more discretion. However, the D.C. Circuit upheld EPA on this issue (*Sierra Club v. Costle,* 1981).

One continuing controversy in air pollution policy that creates conflict between states and regions in the United States as well as between the United States and Canada is how to tackle atmospheric deposition—sulfate and nitrate fallout, which leads to acidification of lakes and soils. Only sulfur and nitrogen oxides are directly controlled by the law, not the sulfates and nitrates that compose acid rain, because these form in the upper atmosphere. Ambient air quality standards apply only to air close to ground level, where it can be said to have an effect on the health of people, not to atmospheric conditions ("Acid Precipitation," 1983). This problem was exacerbated rather than ameliorated by the original administration of the Clean Air Act. Requiring that concentrations of pollutants be reduced in local air quality control regions led some dischargers to adopt a "tall stack" strategy, to disperse their emissions at a greater distance and thus avoid treating them. Originally many states wrote such techniques into their SIPs, and EPA acquiesced. A Fifth Circuit case struck down such SIPs (*NRDC v. EPA,* 1974) and Congress later ratified this decision through the 1977 amendments. Nevertheless some degree of dispersion is still allowed to count in the clean-up, and many such tall stacks were built in the intervening period

(Wetstone, 1980). This strategy, and the increasing number of sources of sulfur and nitrogen oxides, has led to increasing accumulations of acid rain in the eastern United States and Canada.

The 1990 amendments to the Clean Air Act addressed this problem by calling for an absolute reduction in sulfur oxide and nitrogen oxide emissions from 1980 levels by the year 1995, and further reductions by 2000. The reduction in sulfur oxide is to be accomplished through a complex system of allowances for emissions given to 111 electric utilities named in the law based on the BTUs produced by the plants. In an effort to provide market incentives similar to those in the offset and bubble program, Congress authorized plant owners to buy and sell allowances to each other as well as to purchase additional allowances from EPA. Nitrogen oxide reduction goals will be accomplished through a more traditional command-and-control approach (Hoskins, 1989).

In addition, the Clean Air Act's 1990 amendments provided for an emission permit system similar to that long in service under the Clean Water Act that the states will administer. It also calls for control of 189 toxic emissions that EPA has been authorized to regulate but for which it has yet to set standards. It moved regulation of radioactive air pollutants from the control of the Nuclear Regulatory Commission to EPA, and ordered ozone-depleting chlorofluorocarbons (CFCs) phased out by the year 2000 (Peters, 1992). In addition it increased the criminal penalties for violation of Clean Air Act standards. Until 1990 the act provided only for misdemeanor-level sanctions. Now there are felony sanctions for knowing violations of permits, implementation plans, and performance standards (Pappas, 1992).

One strategy that was devised by EPA to help reduce air pollutants shortly after the 1970 law was passed was to control the flow of traffic in the most polluted cities. Several transportation control measures were planned to control indirect sources of air pollutants during the 1970s. Due to industry protests, the 1977 amendments to the Clean Air Act eliminated this authority from the law. There are limits to the impact that reducing individual mobile source emissions and modifying fuel used in cars and trucks can achieve, and these have been reached without achieving NAAQS in many cities. Parts of the 1990 amendments have opened up the possibility that transportation control measures may be required in many heavily polluted states. At least one court decision in the Ninth Circuit has forced EPA to reconsider a SIP that had no indirect source review in it (Rothschild, 1992).

Clearly there are many issues in the 1990 amendments that will have to be resolved by the courts, and it will take several years to do so. Because of its previous frustration in accomplishing pollution control, Congress has made this version more specific than previous ones (Hertz, 1992). The Clean Air Act will continue to be attacked by environmental groups and industrial opponents alike. Each would like to see the courts rein in EPA when it believes its own policy preferences will be advanced in so doing. Both have been successful in obtaining some of their goals through the courts. Much recent legal commentary has focused on cases in which courts, like the executive branch, have demonstrated their concern that costs of pollution control not become excessive. Commentators in environmental journals, especially, tend to argue that the courts need to pay more attention to environmental values in making specific rulings about cases.

One analyst who disagrees with this conclusion is Melnick, who investigated the impact of six different decisions (or groups of cases) and concluded that in each instance the courts had a deleterious impact on air pollution control policy. He does not base his criticism primarily on the courts' interpretation of the laws, but rather on the policy impact that their decisions have had. He argues that in most cases they have forced EPA to act more strictly than is practical, expend its limited resources on unimportant issues, and generally tie the hands of administrators, who should be freer to make bargains with industry to get what is possible in the way of pollution reduction rather than stick to the unrealistic goals that Congress has set (Melnick, 1983).

Business Countersuits

An important development in the 1980s has been the aggressive defense that industry has mounted against most government regulation, whether it be at the local, state, or federal level. One form this has taken is the property rights movement that uses the wording of the Fifth Amendment to the U.S. Constitution to argue that government regulation that diminishes the value of real property is unconstitutional because it "takes property without due process of law" (Epstein, 1985). This argument has been used to attack wilderness preservation and endangered species protection laws, as well as state zoning ordinances. The debate in the press and law school journals has been mirrored in the federal court system, especially in the U.S. Supreme Court, where Chief Justice Rehnquist and property activist Antonin Scalia have made decisions that decrease government's discretion to control land uses.

In *Nollan v. California Coastal Commission* (1987) the Supreme Court agreed with a landowner that California's refusal to grant him a permit to build a beach house unless he agreed to provide public access to the beach was unconstitutional. In *First English Evangelical Lutheran Church of Glendale v. County of Los Angeles* (1987) the Court agreed that landowners might be entitled to monetary compensation from the state if it prevented them from rebuilding in a flood plain. In *Lucas v. South Carolina Coastal Council* (1992) Justice Scalia seemed to argue that the only way a state could justify prohibiting developers from building on erodible beach land was by demonstrating harm to adjacent landowners through use of the law of nuisance. In June 1994 the Court ruled that a town in Oregon could not require a storeowner, who was seeking a permit to expand and to pave over part of a floodplain as a parking lot, to use 10 percent of her land to provide for drainage as well as a bicycle and walking path to enable customers to come into town without using their cars (*Dolan v. Tigard*, 1994). The five-person majority erected a substantial barrier to all future land use regulations by requiring that the local government prove the benefit to the community outweighed the loss of property value to the owner. Moreover, the U.S. Court of Claims under the leadership of Judge Loren A. Smith, has rendered a number of decisions that have awarded compensation to landowners for economic losses due to regulations designed to protect wildlife, wetlands, and other ecological values (Hanley, 1991).

Commentators differ as to what these rulings mean. Some foresee a chilling effect on the willingness of all officials to use their police powers to protect the health and welfare of the public because of the prospect of having to pay property owners for the loss in development value for their land later (Looper-Friedman, 1990). Others point to other cases that have gone in the opposite direction: for example, *Riverside Bayview Homes* (1985), where the Supreme Court upheld the authority of the federal government to regulate wetlands filling. Environmental writers argue against overreacting to the property rights decisions. They believe these cases are exceptions and that the courts have supported government regulation since the 1930s and will continue to do so (Schwartz, 1987; Sax, 1988).

Another recent development in law cases is the strategic lawsuit against public participation (SLAPP suits). SLAPP suits are initiated by developers and other businesses against citizen activists and public interest groups such as consumer protection advocates as well as environmentalists. These activists frequently oppose development projects and other business practices by testifying in public hearings, lobbying policy-making agencies such as zoning boards, advertising in news media, and filing lawsuits. Their opponents try to stop these activities by suing on the grounds of defamation of character, interference with business, nuisance, malicious prosecution, civil rights violations, and even conspiracy. Typically, property owners who object to siting an industrial use that they consider noxious will testify at public hearings against the developers, take out advertisements in the local press in order to convince other citizens to object to the project, and even petition for a referendum to be held. The initiator of the SLAPP suit argues that the public interest group has defamed or libeled him in arguing against the project. In so doing he transforms a political debate into a personal grievance and takes it into court as an individual conflict (Pring, 1989).

The majority of SLAPP suits are unsuccessful and are thrown out on the ground that they interfere with citizens' right to petition their government for redress of grievance. However, these are all tried initially at the trial level of state courts. There, judges' knowledge of the U.S. Constitution varies, and many times cases drag on for years, running up legal expenses for the defendants. Moreover, some public interest groups who have become aware of the potential for suit have backed away from even protesting a new development. The SLAPP suit movement has had a chilling effect on the willingness of citizens to become involved in issues in their communities (Canan, 1989). Many groups do not believe they can sustain the cost of defending themselves against such suits and hesitate to become involved at all.

Opponents of SLAPP suits argue that legislatures could relieve some of the fear of SLAPPs by immunizing people who report law violations or speak at government hearings. They also argue for judges to award attorney's fees to defendants who ultimately prevail in court. However, the best defense is the SLAPPback suit, in which the defendant countersues, claiming that he is being maliciously prosecuted. The latter strategy will likely escalate the conflict, as each side is convinced of its own legal justification and will argue that its opponent is the one with the frivolous claim on the court's time (Abrams, 1989).

Judicial Oversight: Conclusions

All arguments about environmental law in court eventually come down to the issue of how much judicial oversight should be exercised over administrative decisions. In most cases the Supreme Court has favored discretion for agencies, on the ground that administrators understand the policy issues and technical problems better than anyone else, as in the *Vermont Yankee* case. In some other cases, however, the Court has taken a more critical look at what the agencies have done. The latter reaction occurs frequently when the appellant bringing its case to the Court is industry and the agency against whom the complaint is made is a health or environmental one. Most environmental groups have stopped even taking appeals to the Supreme Court when they lose in the lower courts.

One example of the Supreme Court's rejection of an agency's expert judgment occurred in 1980, when the Court agreed with the Fifth Circuit's remand of the Occupational Safety and Health Administration's (OSHA) benzene standards for worker exposure (Linet and Bailey, 1981). The plurality of a divided court ruled that OSHA had not produced sufficient evidence to demonstrate that its standard was necessary to protect human health. Four justices, however, disagreed with this conclusion, but neither side was willing to address the crucial question whether OSHA must produce a cost-benefit analysis to justify any of its decisions. Justice Rehnquist went so far as to revive the New Deal Court's argument that Congress had overdelegated its policy-making function to the executive branch (Rodgers, 1981). In comparing the *Vermont Yankee* case with the benzene case, it appears that at least a plurality of the justices is more willing to allow lower federal courts to review agency decisions when they are under challenge from industry on the grounds of cost rather than from the public on the grounds of safety or health.

Judges at all levels of the federal system recognize the problems of conducting oversight of expert agency decisions. They also differ regarding the appropriate balance to be made between economic costs and environmental/health values, and potential litigants obviously understand and use this information in seeking favorable forums for their cases (McGarity, 1980). Conscious of the problems of second-guessing expert agency decisions, judges have developed various strategies for coping with the problem. Judge Leventhal on the D.C. Circuit in the 1970s argued for judges to have access to court-appointed scientific experts in order to assist them in understanding the conflicting testimony of adversarial expert witnesses. Others have argued the need for a "science court" composed of natural scientists to define the common ground among experts over controversies involving natural science phenomena (Martin, 1977). Judge Bazelon of the D.C. Circuit, a contemporary of Judge Leventhal, was more skeptical of expert judgments about uncertainty and preferred procedures designed to ensure that all opinions about an issue are incorporated into the agency decision-making process itself (Bazelon, 1977). Obviously, attitudes about the importance of economic and health considerations and about the fallibility of experts vary among judges, as they do among other people. These values are often masked by a procedural discussion of the appropriate role that judges should play in reviewing agency decisions.

Some analysts argue that judges are singularly unsuited to make broad policy decisions because of their lack of expertise and the necessity for them to answer individual questions about particular cases (Horowitz, 1977; Melnick, 1983). Others caution against the dominance of technical experts and urge the continued use of lay judges to counterbalance the inequities that are certain to arise when there is an unrestrained technocracy controlling policy (Tribe, 1972; Yellin, 1983). As one student of the administrative process has indicated, the balance moves continually between a preference for substantively "correct" decisions reached by technical experts and democratically derived solutions with public participation encouraged and facilitated by the courts' insistence on due process (Shapiro, 1982).

Discussion about judicial oversight is complicated by the fact that it has to be viewed in the context of agency positions on policy, and these change with administrations. During the 1980s the executive branch came to emphasize economic values and deregulation. Environmental advocates regarded expert judgments, even by agencies charged with maintenance of the public health and safety, suspiciously. Congress, too, reacted against loosening enforcement of environmental laws by tightening requirements in the laws, as in SARA and the Clean Air Act amendments of 1990. Courts in the late 1990s are likely to face ever more detailed laws pertaining to increasingly technical issues, as Congress attempts to control the discretion of the executive branch more closely. This is only likely to increase the workload in the federal courts, as economic organizations and environmental groups alike all seek to have their day in court.

Judges appointed throughout the 1980s by the Reagan and Bush administrations were selected for their conservative ideology. It is, therefore, reasonable to expect that federal judicial decisions made by these judges at all levels will show an antiregulatory orientation. One scholar has tested this hypothesis empirically and has found that Reagan/Bush-appointed appellate judges are more likely to vote for regulation reduction in Clean Air Act and Clean Water Act cases than are Carter appointees (Kovacic, 1991). This difference in outcomes was especially evident in the D.C. Circuit. Other scholars have been unable to replicate this finding. Instead, Reagan and Bush appointees seem to favor government agencies, regardless of who their opponent in court is. In fact, they uphold executive decisions most when industry challenges them (Wenner and Ostberg, 1994).

This tendency for Reagan and Bush judges to favor the government's position could be due to the fact that the judges were in ideological agreement with the agencies making the decisions in the 1980s, or it could be they truly believed they should defer to administrative discretion. If the

Clinton administration takes a more proactive stance toward environmental controls and industry tests those actions, as it no doubt will, the Reagan and Bush appointees will be put to a more rigorous test. When there is a disjuncture between judges' values and those of political decision makers, opportunities for judicial activism increase.

Directions for Future Research

Doctrinal development of environmental law has been extensively treated in the law journals in the last twenty years; the above review constitutes only a sample of the topics that have been addressed. Opinions among commentators is divided between those who prefer more or less regulation of the environment. Given the propensity for scholars to write on developing areas of law, it seems likely that the newest laws, such as SARA and the amendments to the Clean Air Act, will be emphasized next, as the courts are called on to interpret them.

With few exceptions, there has been little effort to link this literature with general policy discussions. One promising area of research that could help to make this linkage is impact analysis, through which the effects of major landmark court decisions can be tracked in the broader political arena. This approach has been used in examining the impact of NEPA (Anderson, 1973; Liroff, 1976) and the Clean Air Act (Melnick, 1983). It could be expanded to include other important laws in the pollution control field, tracing congressional responses to court decisions through legislative amendments, and administrative responses through altered regulations. Some students of the congressional process regard court precedents as one major impetus for change. Students of the courts could consider court decisions as independent variables capable of making a difference in the policy-making process. The impact of important cases could also be traced at the local and state government levels where much environmental policy is being carried out today. Finally, the effectiveness of different enforcement mechanisms could be evaluated through comparisons of the outcomes of cases representing those varied methods.

Even more evident by its absence is a link between doctrinal review and the judicial behavior literature. Yet environmental law is a prime candidate for such research. Many environmental statutes were developed by organized groups with a conscious intent to use the courts afterward to advance their causes. During the last ten years, however, industry's use of courts to slow the regulatory process has exceeded environmental groups' use of them for their policy goals (Wenner, 1994). Questions about the success of these groups in court seem particularly relevant to this area of the law and could be used to extend the general knowledge of judicial scholars about litigant influence on courts.

Another variable external to courts and judges, the socioeconomic and cultural context in which they make their decisions, also appears highly promising for explaining judicial decisions in environmental cases. Clear regional variations exist among court outcomes, which reflect congressional voting on the same issues (Wenner and Dutter, 1988). Northeastern, midwestern, and West Coast judges make more favorable decisions for environmental groups than do southeastern and southwestern judges. Attorneys have always forum-shopped among judges within the same jurisdiction. It appears they have an opportunity to forum-shop regionally in this policy area, and there is evidence they have acted on this information (McGarity, 1980).

At the individual judge level, judicial philosophy regarding environmental values has gone largely unexamined. Yet there is a large, untapped reservoir of information in the form of judges' opinions in the hundreds of environmental cases that have been adjudicated in the last twenty years. Some judges may have developed worldviews that incorporate sensitivity to environmental values, and some, such as the late Supreme Court Justice William O. Douglas, have written extensively on the subject. Background characteristics that have proved useful in other areas for the law may also be demonstrated to affect judges' rulings on the environment (Grunbaum, 1974).

The Reagan and Bush administrations adopted a conscious policy of appointing federal judges with conservative philosophies to match their own social values, especially regarding church/state relations and civil rights. Given the general antiregulatory climate in both these administrations, it is reasonable to believe that their judicial appointees also reflect this value, but as we have seen, not all research agrees. The time is ripe now to examine Reagan and Bush judges' reactions to the initiatives made by a Clinton/Gore program of environmentalism. Indeed, this difference between the attitudes of the executive and judicial branches affords us a rare opportunity to test theories about judicial activism by examining environmental cases. Similarly, our understanding of the courts' contribution to environmental policy making should be enhanced by greater utilization of judicial theory in future studies of environmental law.

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10

Elites and Environmental Policy

Mark E. Rushefsky

We examine in this chapter the role of elites in environmental policy. In doing so, we will look at several bodies of literature. First we explore the policy process, through which elites play an important role. A general discussion of elites follows, focusing on the conflicts over the existence of elites and the role they play. The major portion of the chapter explores the literature on elites in the environment; as we shall see, much of it is based on attitudinal research employing surveys. Some observers agree that there are environmental elites, but see them as asserting a set of insurgent values while trying to maintain their position in society. Others see support for the environment as fairly widespread. The chapter ends by evaluating the literature and suggesting research needs.

An Integrated Policy Model

Figure 10.1 presents a model (Jones, 1984; see also Anderson, 1990; Rushefsky, 1990) that provides a framework for integrating and considering the literature mentioned above.

In Jones's formulation, problem identification consists of a variety of functional activities: perception, definition, aggregation, organization, and representation. In the early stage of the policy process (as well as many of the others), we can conceive of the process as clashes among different actors and groups over problem definitions. The actors or groups that can impose their definition will emerge victorious. But as Lindblom and Woodhouse (1993) point out, problems are not out there waiting to be considered. Someone must define a set of events as a problem worthy of public attention.[1] Jones writes:

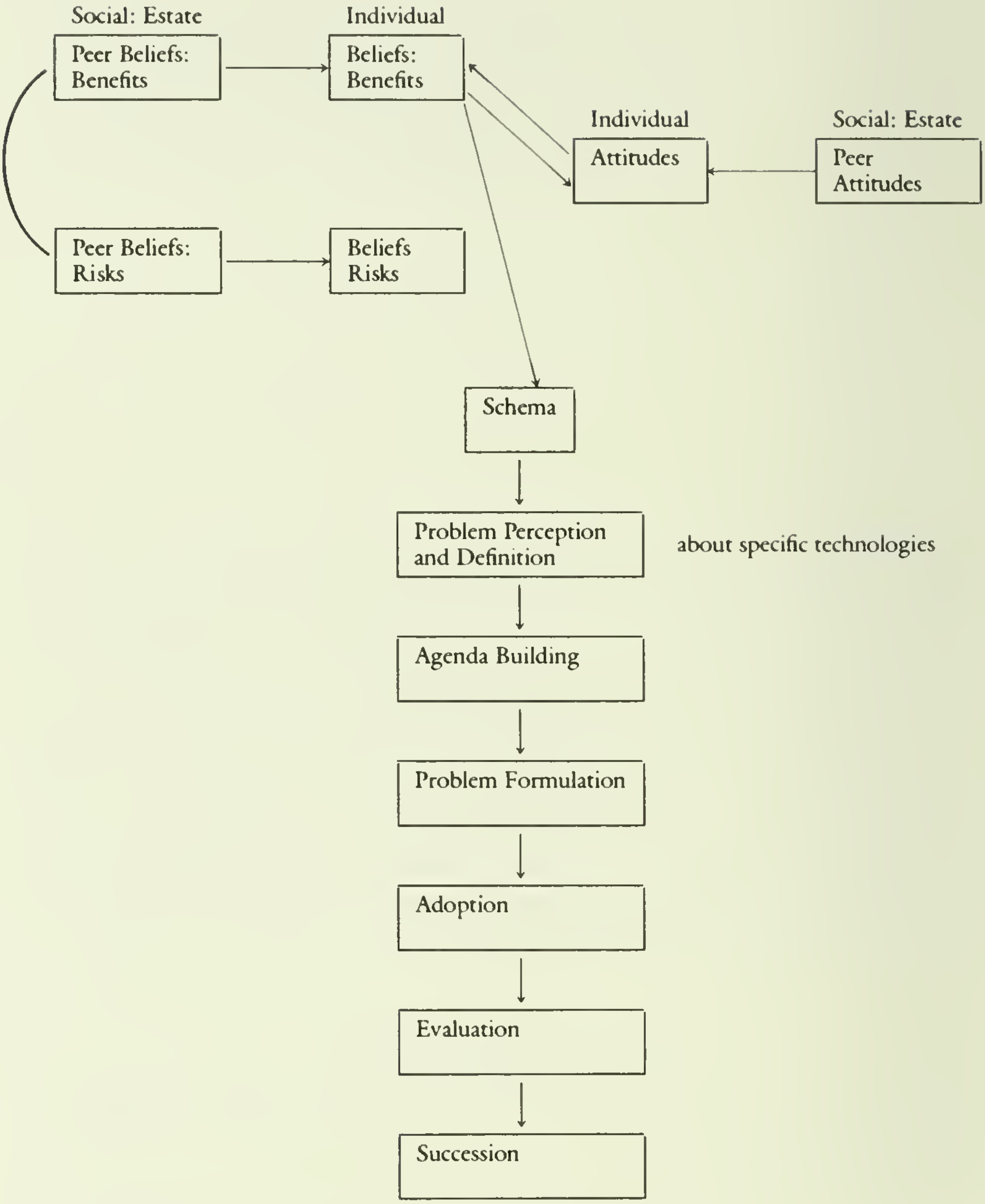

Figure 10.1 Integrated Policy Model

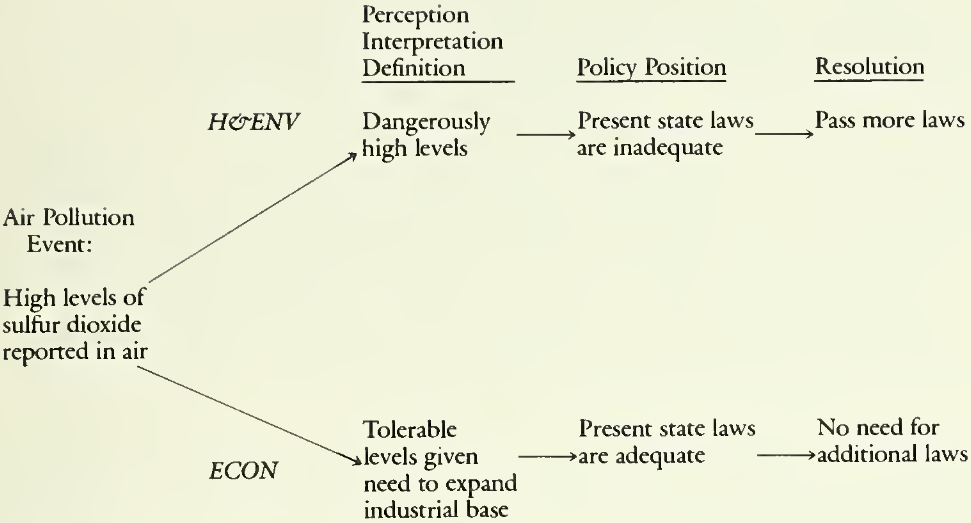
Perception
Interpretation
Definition
Policy Position
Resolution
H&ENV
Dangerously high levels
Present state laws are inadequate
Pass more laws
Air Pollution Event:
High levels of sulfur dioxide reported in air
ECON
Tolerable levels given need to expand industrial base
Present state laws are adequate
No need for additional laws

Figure 10.2 Perceptual Model

> Perception is important in the policy process, therefore, because it conditions the definitions of problems. As used here, *perception* simply means the reception and registration of an event through sight, hearing, touch, and smell. Involved in that comprehension is an interpretation. Thus *perception refers to an event. Definition refers to a problem.* Something happens, someone perceives it in a particular way and defines it as a problem. (Jones, 1984:52, emphasis in original)

Perception is the registering of some event; definition is the interpretation of the meaning or significance of that event. Perception and definition lead to a particular set of possible solutions to the defined problem; they also eliminate other possible sets.

A study by Maggiotto and Bowman (1982) stressed the importance of perception and definition in structuring the subsequent course of policy making. While their research was limited as to substance (air pollution) and sample (Florida state legislators), their results do support and make explicit the thrust of this chapter. Maggiotto and Bowman hypothesized that perceptual screens (or ideologies, belief systems, or schemas) filter out information inconsistent with that screen. The authors saw two rival sets of problem formulations in hearings on air pollution: one stressed pollution as an environmental and health problem; the other saw pollution as largely an economic problem. The results of their survey led them to posit a perception model, linking events, perceptions, positions, and solutions (see figure 10.2). They described the model as follows:

> An event occurs in the environment and is perceived by the policy maker. Those who view air pollution from a health and environmental perspective see the incident as posing a threat, while those who view air pollution as a question of economics see the same event as tolerable given the alternative values which they hold. These conditional relationships produce different policy resolutions because the event is evaluated in the context of what the state is already doing. Hence, state laws are either adequate or not, or should be changed or not, depending upon the conditional relationship between event and contextual interpretation of the event. (Maggiotto and Bowman, 1982:167–68)

Elites play an important role in three other stages of the policy process. Following problem definition is agenda building, which occurs when government or those close to government consider a problem or issue worthy of discussion. Kingdon (1984) writes that agenda change occurs when problems, proposals, and politics come together in a window of opportunity. Cobb, Keith-Ross, and Ross (1976) state that agenda building may occur through one of three processes, two of which are most important to our concern. In one situation ("outside initiative"), those outside the political system petition for government to deal with a problem. In the other ("mobilization"), those inside government seek to get a policy considered and adopted. In environmental policy, we can see both situations or models in action.

Policy adoption is a particularly complex phase of the policy process. We normally think of policy adoption as the passage of legislation (Anderson, 1990; Jones, 1984). However, policies may be adopted by chief executives through executive orders, by bureaucratic agencies through regulations, by the courts and by the people through mechanisms of direct democracy, such as the initiative or referendum.

Implementation, the carrying out or execution of public policy, is perhaps the most complex of the phases of the policy process. For Jones (1984), implementation comprises three subphases: organization of bureaucracies, interpretation of legislation through regulation, and application, or the actual carrying out of the policy. Implementation may differ depending on whether the policy in question involves the distribution of goods (such as the building of sewage treatment plants) or regulation (such as setting standards of air emissions) (see Lowi, 1964; Ripley and Franklin, 1986). Bryner's (1993; see also Cohen, 1992) fine study of the 1990 Clean Air Act demonstrates the involvement of actors from different segments of society. Table 10.1, from Bryner, lists the major actors by category. Many of the

Table 10.1 Major Players in Amending the Clean Air Act of 1970

Environmental Groups

- National Clean Air Coalition
  - Sierra Club
  - Natural Resources Defense Council
  - Environmental Defense Fund
  - U.S. Public Interest Research Group
  - American Lung Association
  - National Wildlife Federation
  - Audubon Society
  - United Steelworkers Union
  - National Council of Churches

Industry Groups

- Clean Air Working Group
  - Business Roundtable
  - National Association of Manufacturers
  - Trade associations (coal, electric utilities, steel, chemicals, and automobile industries)

State and Local Officials

- State and territorial air pollution program administrators
- Local air pollution control officials
- Representatives of individual states

Executive Branch

- Office of Management and Budget
- Domestic Policy Staff
- Chief of Staff
- Environmental Protection Agency
- Department of Energy
- Department of the Interior
- Department of Transportation

Legislative Branch

- House
  - Speaker
  - Committee on Energy and Commerce
    - Subcommittee on Health and the Environment
    - Subcommittee on Energy and Power

- Senate
  - Majority leader and minority leader
  - Committee on Environment and Public Works
  - Subcommittee on Environmental Protection

SOURCE: Bryner, 1993:89.

same groups are involved in implementation of policy (see also Davis, 1993:53–62).

Policy Elites

There has been a long-running debate in political science (and sociology) over power structures, who governs, and so on.[2] In simplified terms, we can distinguish between pluralist and elitist views. Pluralists maintain that no single elite or set of elites is overwhelmingly influential or participates alone in decision making (see, for example, Dahl, 1967; 1982; Polsby, 1980). Elite theorists suggest that actors in institutional positions of power (both governmental and private) make most of the policy decisions or are highly influential (Domhoff, 1983; Dye, 1990; Mills, 1956). In reality, both the elitist and pluralist schools of power say the same thing. Elitists by definition see only a few exercising power. But pluralists also agree that only a few participate (though asserting that participation is considerably more fluid than elitists maintain). In a sense, pluralists confront what the early-twentieth-century political scientist Robert Michels (1962) called the "iron law of oligarchy." Even in those organizations committed to democratic procedures and wide participation (such as the European social-democratic parties that Michels studied), only an active minority participated over time.

The elitist model has several variants. The view mentioned above may be labeled the "ruling elite model." This model is based on overall or societal power structures, but does not necessarily identify those who make decisions or are influential in specific policy areas. Other terms have been used to describe a set of elites in policy arenas. "Iron triangles," "policy clusters," and "subgovernments" describe close relationships among congressional committees and subcommittees, executive branch agencies, and relevant interest groups. The terms suggest a tight relationship among these three groups of actors that make much of the policy decisions with little publicity.

Lowi's (1964) distinction among distributive, regulatory, and redistributive policy arenas, however, suggests that iron triangles are more likely and stable in distributive policy than in the other two (see also Ripley and Franklin, 1986). While there certainly are elements of distributive policy in the environmental area, that area is better characterized as regulatory. Heclo (1978) proposes the term "issue networks" to describe a more fluid flow of actors in and out of policy issues. Kingdon's model of agenda building (1984) also suggests this fluidity. Perhaps the term most useful to us, or for any policy area, is the term "policy elite":

> The shift from disputes about the place of environmental policy in the political agenda to debates about the specifics of policy has generated a new group of policy specialists whose work centers on environmental health and safety. Unlike the power elite, who deal only with broad issues, these professionals do the daily work of the risk policy system. While they have more clout than does the average citizen, the policy elite is not as influential as the power elite. Unlike the power elite, they tend to specialize, focusing their energies on a limited set of related issues. By promoting or opposing policies, by developing and interpreting data and by administering programs, they shape regulation. Their work is what translates policy demand for environmental protection into action. . . . They are of special importance in those [policy systems] with a high scientific and technological content. (Dietz and Rycroft, 1987:13–14; see also Jenkins-Smith et al., 1991)

Problem identification (as well as the rest of the policy process pictured in figure 10.1) is thus the result of elite interaction. But which elites? Dye (1990) identifies a number of institutional bases, for example, government, the military, and the corporate sector. Hamlett's (1992) model of political arenas—what Don Price (1965) called "estates"—is particularly helpful in identifying such institutional bases. He identifies seven arenas: corporate-managerial, executive, legislative, regulatory, judicial, popular mobilization, academic-professional, and organized labor. The popular mobilization arena contains interest groups like consumer and environmental groups. While there are certainly divisions within each arena, the leaders within each one (elites) are appropriately identified as important participants in environmental policy making. We agree with the pluralists that participation is fluid. For example, those in a particular area concerned with hazardous waste (the individuals within an estate) might not be the same individuals concerned about air pollution. But in general, this model does allow us to identify in broad terms the appropriate elites. Dietz and Rycroft's (1988) study of risk professionals (those who spend most of their time involved with environmental risk concerns) included people from the following groups: executive branch agencies (especially the Environmental Protection Agency), congressional staff and support agencies, law and consulting firms, environmental organizations, corporations and professional and trade associations, research organizations (such as think tanks and universities), and a miscellaneous category (including labor groups and state and local governments).

Van Horn, Baumer, and Gormley (1992) support Hamlett's notion of looking at elites in different settings. For Hamlett, the settings are by estates. For Van Horn, Baumer, and Gormley, the different settings are institutional, what they call policy domains. They distinguish among corporate politics ("boardroom"), bureaucratic politics (agencies), legislative politics ("cloakroom"), chief executive politics, courtroom politics, and "living-room" politics (a residual category including public opinion and citizen activists). Politics in each of these arenas will differ, as will the relevant elites. Van Horn, Baumer, and Gormley note the importance of the corporate sector in the American economy, observing the growth of the corporate sector during the Reagan and Bush administrations. Lindblom and Woodhouse (1993) note that, though business does not win all the time (the presence of considerable environmental legislation is evidence of that), the corporate sector maintains a privileged position:

> The business sector does not receive everything it asks for, of course, sometimes even suffering bitter defeats, such as the National Clean Air Coalition's victory in the 1990 Clean Air Act revisions. But beneath the nontrivial ups and downs of business influence is an underlying pattern, which is that government functionaries must listen to business executives with special care, care reserved for no other group in society. Government officials must find out what business needs even if corporate executives do not take the trouble to speak for these requirements; must give managers enough of what they need to motivate production, jobs, and growth.
>
> In each of these ways, governments award to business managers a privileged position in policy making. Elected officials often end up giving business needs precedence over concerns that citizens express through electoral and interest-group channels. Neglect of business brings stagnation or unemployment, at great peril to officials in power; in contrast, citizen and interest-group demands often can be evaded or deflected, given the looseness of popular control over officials. (Lindblom and Woodhouse, 1993:92–93)

Sometimes, even when the business sector loses in one arena, say legislative, they may win in others. The Clean Air Act Amendments of 1990 mentioned above are a good example of this. While business may have suffered some defeats in the legislation, they had channels to appeal to in writing the implementing regulations. During the Bush administration, the Council on Competitiveness pressured the Environmental Protection Agency to relax rules on private interests (see Schneider, 1992; "EPA Report," 1992).

Elite Recruitment

One question that may be asked about elites is how they emerge; that is, how are people recruited into elite positions? Some obviously emerge because of their institutional positions in agencies, interest groups, and so on, though other paths to influence and power are available. Because environmental policy is so heavily dependent on science and technology and the uncertainties of science, it would stand to reason that scientists would become important political actors. In Goodell's (1977) words, scientists become "visible."

In the early years of the modern environmental movement, Rachel Carson's *Silent Spring* (1962) demonstrated how a scientist could be influential in setting the policy agenda and making policy proposals. In later years, Samuel Epstein, in *The Politics of Cancer* (1978), has been a forceful spokesman for stringent regulation of carcinogens.

Two interesting examples of the scientist as political actor are Bruce Ames and James Hansen. A prominent cancer researcher, Ames developed the first short-term test to detect mutagens. More recently, Ames switched his position based on findings that naturally occurring causes of cancer are much more significant than synthetic chemicals. Ames's work and his activities as a political actor since then have been aimed at getting this new viewpoint accepted (Rushefsky, 1986).

Hansen, a scientist with the Goddard Space Science Institute, told Congress in 1988 that the greenhouse effect (warming of the climate because of the emission of certain gases that trapped heat) had already begun. He testified that

> the Earth is warmer in 1988 than at any time in the history of instrumental measurements. . . . [G]lobal warming is now sufficiently large that we can ascribe with a high degree of confidence a cause and effect relationship to the greenhouse effect and . . . the greenhouse effect is already large enough to begin to affect the probability of occurrence of extreme events such as summer heat waves. . . . [H]eatwave/drought occurrences in the Southeast and Midwest United States may be more frequent in the next decade. (Quoted in Gribbin, 1990:3)

Another path to influence is the crusading free-lance writer. Edith Efron epitomizes this type. Her 1984 book *The Apocalyptics* was as controversial as *Silent Spring* two decades earlier. Whereas Carson emphasized risks posed by agricultural pesticides, Efron's work was a major attack on risk policy.

Perhaps the most interesting of paths to influence is the self-made actor.

This is someone with little expertise in the area but who feels threatened by environmental hazards, what Van Horn, Baumer, and Gormley (1992) call grassroots politics. Self-made actors seek redress for exposure to hazards. They try to mobilize their community and seek wider support from other political actors, including the media (the outside initiative model of agenda building mentioned above). Two examples illustrate this type.

The first example is Lois Gibbs of Niagara, New York. Niagara is the location of the infamous Love Canal, formerly a toxic waste dump that leaked into the surrounding neighborhood, including the school built on the site. Gibbs, concerned about the hazard and lack of response by local and state officials, began a door-to-door survey of her neighbors to discover the extent of harm and to mobilize the community. A Love Canal Homeowners Association was formed, with Gibbs as its head, that pressured local, state and federal officials to take action. Eventually, the state bought the inner ring of homes near the dump and took action to prevent further leakage. The Love Canal incident was instrumental in the passage of the Comprehensive Environmental Response, Compensation and Liability Act, better known as Superfund, in 1980 (Levine, 1982).

The second example is from the other side of the country, Oregon. The hazard this time was the herbicide 2,4,5-T and its contaminant, dioxin. Forests in rural Oregon were treated with the herbicide to reduce competition from surrounding brush. Several months after one of the applications, a resident of one of the nearby towns, Bonnie Hill, suffered a miscarriage. In talking with her neighbors, Hill noted a highly unusual number of miscarriages during the spring, when the spraying occurred. She and others then sought to stop the spraying, an effort that precipitated an emergency suspension of the herbicide by the Environmental Protection Agency in 1979 and an agreement by the major manufacturer, Dow Chemical, to cease production (Van Strum, 1983).

There are other instances of local community residents becoming activists. Often this is associated with attempting to stop the location of facilities, such as nuclear waste or solid waste dump facilities, in their neighborhoods or communities. Such action is often called the NIMBY ("not in my back yard") syndrome. The relatively recent environmental justice movement (see below) also produces local activists.

Elites and Belief Systems

A major question in the study of elites is how elites (whose perceptions and interactions are critical) perceive environmental problems and act on those perceptions. The top of the model in figure 10.1 suggests how the process might work. The model states that, first, there is interaction between an individual's beliefs and attitudes and, second, that an individual's beliefs and attitudes are affected by peer beliefs and attitudes. In our terminology, peer beliefs and attitudes are estate beliefs and attitudes. The model as a whole (and this section of the model in particular) relates the social or societal level to the individual level; it has macro and micro dimensions.

The individual beliefs and attitudes form a schema, defined as a "pre-existing assumption about the way the world is organized" (Singer, quoted in Axelrod, 1973:1248). Axelrod (1973:1248) writes: "When new information becomes available, a person tries to fit the new information into the pattern which he has used in the past to interpret information about the same situation. If new information does not fit very well, something has to give." Schema (also known as "ideology," "belief system," or "perceptual screen") provides the basis by which an individual will perceive and define an event and possibly identify it as a problem that the public sector should confront.

A number of studies have looked at elites and belief systems, especially in the foreign policy area (Axelrod, 1973; Jarvis, 1976; Pruitt, 1965). There have also been studies examining environmental belief systems and attitudes of various groups. Indeed, this is the dominant form of study of elites and the environment. Constantini and Hanf (1972), in an early study of elites in Lake Tahoe, examined the relationship between variations in environmental concern and other environmental perceptions, background of decision-makers, and political and social psychological attitudes. Their descriptive study showed that there were considerable differences between those rating high on environmental concern and those rating low. For example, those rating high were more liberal and more cosmopolitan than those rating low.

Pierce and Lovrich (1980) compared the belief systems of several different groups in Idaho: the general public, "attentive" publics, and state legislators. Their study, a particularly detailed and rich one, examined the cognitive consistency ("constraint") of belief systems among the different groups. They did indeed find this consistency within belief systems. Pierce and Lovrich concluded, among other things, that

> preservationist identification plays a significant role in environmental belief systems, acting as a general orientation around which other beliefs can be organized and interpreted. As in other policy domains, the environmental one is characterized by a single dimension along which a number of objects and beliefs can be arrayed, and which can be used

> to create links to other aspects of politics, such as the partisan and the ideological. (Pierce and Lovrich, 1980:282)

A more recent study examined the "devil" hypothesis. In this work, the perceptions concerned opponents on environmental issues, rather than the issues themselves. In this sense the study is closer to the international relations literature than the other environmental studies. The study, by Hunter and Sabatier (1985), examined the extent to which members of interest groups overestimated the strength of their opponents (opponents as "devils") and underestimated their own strength. Their research confirmed the existence of the devil hypothesis.[3] They concluded that "the devil hypothesis has all the worst features of a positive feedback loop" (Hunter and Sabatier, 1985:22), thus leading to a cycle or spiral of suspicion and conflict (see also Jarvis, 1976, on this point).

A New Environmental Paradigm

One other work deserves mention here: the three-country survey directed by Milbrath (1984). Milbrath's study investigated whether a new environmental paradigm was taking root. He contrasts this paradigm with the older one, which he and others call the dominant social paradigm, grounded in materialism. Based on his survey in Germany, England, and the United States (the United States in 1980 and 1982), Milbrath classifies the respondents into eight categories. At the extremes of the continuum are the rearguard (defending the dominant social paradigm) and the vanguard (promoting the new environmental paradigm). The middle group included the establishment and nature conservationists. The sample of respondents consisted of environmentalists, the general public, labor leaders, elected and appointed officials, business leaders, and members from media groups. Milbrath sees a revolutionary change occurring as the new environmental paradigm begins to supplant the dominant social paradigm. Dunlap and Van Liere (1984) find that support for the dominant social paradigm is related to low levels of environmental concern.

One note of caution has been raised by Lovrich et al. (1986). The new belief system described by Milbrath, and indeed environmental belief systems commonly seen in the literature, may only be a Western phenomenon. Pierce et al. (1986) compared belief systems of environmental group members in the United States and Japan. They found considerable differences, with American environmentalists more concerned about preservation and postmaterialism and supporting the new environmental paradigm, whereas

Japanese environmentalists interpreted environmental problems within a public health context.

Dalton (1987) found generational differences in values and environmental concern. For example, younger people tended to emphasize postmaterial values more than older people, who tended to hold materialistic values. Dalton also notes that the more significant findings were within age cohorts: he found an intensification of political views among younger liberals and conservatives, leading to a polarization along ideological lines among younger elites, much greater than the polarization among older elites.

Manzo and Weinstein (1987) interviewed ninety-three members of the Sierra Club, about half of whom were actively involved in the club and about half, inactive. Their analysis found several variables that distinguished the two groups: activity in other organizations, values, perceptions of citizen efficacy, ideology, club-related friendships, and personal feelings of environmental harm. They concluded that differences in experiences after joining the club were important in explaining who became active and who remained inactive.

Environmentalism and Elitism?

There are some studies that follow from investigation of the new environmental paradigm, but in a negative tone. One of the first to take this tack is the study by Douglas and Wildavsky (1982). They reject the concept, popularized by, among others, Barry Commoner in *The Closing Circle* (1970), that technology, particularly developments in the post–World War II era, is responsible for threats to the environment. Rather, they argue that longevity has increased and advanced industrial societies are healthier than less-developed nations. If technology is not the answer, then what is?

Douglas and Wildavsky assert that perceived risks or threats to the environment are socially (culturally) determined. Environmentalism, a critique of society, grew out of the Vietnam and civil rights protests. Indeed, Douglas and Wildavsky claim that the Black Power movement in the 1960s forced out white activists who then sought other outlets for attacking society: "Thus a cadre of white activists, accustomed to leadership and trained to represent deprived groups, was left out of work and free to lead the fight against risks perpetrated by giant corporations and big government on the public at large. The major manifestation of their leadership became the public interest group" (Douglas and Wildavsky, 1982:164). Douglas and Wildavsky raise several important issues about elites and the environment. Are environmentalists predominantly of a different socioeconomic class than the population as a whole? Do environmentalists maintain a different set of cultural values from the general population? Is support for environmental protection racially distinguishable?

We have already discussed the issue of cultural values. Milbrath and others assert that there is a new environmental paradigm that is the polar opposite of the dominant social paradigm. John White (1988), in his study of presidential elections in the 1980s, found that the elections were often focused on a set of competing values.

Rothman and Lichter (1987) tested the general Douglas and Wildavsky hypothesis that strong support for environmental protection is related to a rejection of traditional values. They surveyed various leadership groups, covering some of the same types of groups discussed above but adding others such as national media journalists, science journalists, military leaders, and television and motion picture entertainment creators. Rothman and Lichter tested five specific hypotheses, focusing on nuclear energy:

1. The relevant scientific community believes nuclear plants to be safe, and neither ideology nor economic interest plays a substantial role in their assessment.
2. Among other key leadership groups, by contrast, views about nuclear energy correlate with political ideology.
3. National media journalists are skeptical about nuclear safety.
4. Journalists inaccurately report the views of the relevant scientific community.
5. The views of other leadership groups on nuclear energy correlate highly with news sources that they consider reliable. (Rothman and Lichter, 1987:385)

In general, their study supports the five specific hypotheses and the more general one. It should be pointed out that nuclear energy is perceived by the public in a quite different way from other technologies. Slovic et al. (1979) have shown that nuclear power is essentially an outlier: it is both an unknown and dreaded risk and is judged as much more hazardous than any other technology (see also Vlek and Stallen [1980]). Thus, one can raise the possibility that different results may occur with less-feared technologies. Buss and Craik's (1983) more general study of risk perceptions offers modest support for the relationship between environmental concern and ideology.

Taylor (1989) reviewed the literature looking for explanations of the gaps between whites' and blacks' concern about the environment. Her review showed lower concern and less activity about the environment among blacks than among whites "and that blacks/nonwhites were less likely to perceive environmental hazards such as smog . . . than whites even when they lived in more severely polluted areas" (Taylor, 1989:176). She found that variables such as age, residence, political ideology, and education are among the better predictors of environmental concern. She noted, as others have, that the environmental movement is primarily a middle- and upper-income phenomenon. Taylor cited figures that 13 percent of the general population see themselves as active on the issue and that less than 1 percent are members of environmental groups.

Tucker (1982) makes the clearest charge that environmentalists are an upper-middle- and upper-class elite:

> Who are they, and why do they do the things they do? The answer is that environmentalists are simply an elite. They are people who have benefitted from the economic system much more than the average person. Then, instead of wanting or allowing others to do the same, they have set their sights much higher than normal—much higher than anyone who is not in a privileged position could set them. The not-unintended effect of these efforts has been to make it much more difficult for people who have not already climbed the ladder of affluence to achieve what environmentalists themselves have already attained. Far from being a new departure, this behavior exactly matches the way most elites in history have reacted to their positions of privilege. Their values and positions are those of a nation's aristocracy. (Tucker, 1982:42)

Tucker further notes (p. 44) that all surveys show "that support for environmentalism has been concentrated in the upper-middle-class, professional segment of society." Tucker thus makes the most extreme of arguments about environmentalists, but one that follows from some of the other research (Rothman and Lichter [1987]; Douglas and Wildavsky [1982]).

While not subscribing to the cultural views expressed above, Lynn's (1986) analysis supports some of their assertions. She examined the interplay of science and values in risk disputes. The controversy over the risk assumptions in the Occupational Safety and Health Administration's generic cancer regulations (see Rushefsky, 1986) led her to test the hypothesis "that regulatory values and other social and political values influenced the selection among scientific assumptions and, furthermore, that these regulatory values seemed linked to place of employment" (Lynn, 1986:40). She interviewed 136 industrial hygienists and occupational physicians employed in three settings: government, industry, and universities. Her overall findings confirmed the linkage among scientific beliefs, political values, and place of employment. Government scientists were more likely to be politically liberal and to choose protective or risk-aversive scientific assumptions. Industry scientists were more likely to be politically conservative and to choose more risk-tolerant assumptions. University scientists were in between.

Evaluating the Elitist Critique

Of course, none of this is really new. E. E. Schattschneider noted in 1960 that there was an upper-class bias to the "pressure system" (interest groups) (Schattschneider, 1960:31). But further work on environmentalism and elitism (in this negative sense) critiques this implicit view.

Dietz and Rycroft (1987) conducted a study of 223 risk professionals in the Washington, D.C., area. They argued that a descriptive study was necessary because of the lack of systematic and theoretical work in the area. Their research was structured around four perspectives as a way of understanding the risk professionals, all four of them relevant to our concerns. The first is the elite perspective, exploring the relationship between political power and personal background. The second is the class perspective, looking at the linkage among ideology, economic interests, and attempts to influence policy. The third perspective centers on the extent to which risk professionals are an establishment, representing institutional interests. The final perspective focuses on risk professionals as a community, examining linkages and communication.

Their findings both support and contradict some of the research discussed above. For example, they found strong support for the Lynn (1986) hypothesis of the linkage between worldview and place of employment. Rothman and Lichter (1987) did not find this result among their scientists, suggesting methodological differences between these three studies (sampling and types of questions asked).

Dietz and Rycroft (1987) tested support for the dominant social paradigm and the new environmental paradigm that Milbrath (1982) and others discussed. In essence, this is the same question posed by Rothman and Lichter, in asking whether leadership groups rejected traditional values. In general, the Dietz and Rycroft study supports the view that risk professionals reject traditional values (the dominant social paradigm), with the important exception of those in the private sector. In contrast to Rothman and Lichter (as well as Douglas and Wildavsky [1982]), however, Dietz and Rycroft do not imply criticism of those supporting the new environmental paradigm. They argue that it is equally possible that those who support the dominant social paradigm are Pollyannaish, denying the seriousness of environmental problems.

But more provocative is their point that we should "focus on the interplay between ideology and the strategy and tactics of actors in the policy system" (Dietz and Rycroft, 1987:51). Environmentalists initially raised alarms of environmental problems and engaged in protest activities. Over the years, they have moderated the rhetoric and concentrated on specific issues. The private sector's original tactics were to deny the existence of problems and then to deny the seriousness of risks, suggesting a focus on more serious concerns. Dietz and Rycroft's work stands virtually alone in suggesting a relationship between elite beliefs and tactics.

Apart from Dietz and Rycroft's study, there are two problems with Tucker's analysis (and the cultural thesis in general). First, Tucker is wrong. In the same issue of *Public Opinion,* Ladd (1982) notes support for environmental issues across all segments of society. Ladd cites Mitchell's 1979 article that demonstrates that there are no class differences on environmental concern. Ladd makes the further important observation:

> It is now evident that two different sets of value changes were occurring at the same time [the 1960s and 1970s]—sets which should have been kept separate because they reveal different patterns of group response. On the one hand, there was indeed a rise of values and interests that can properly be called "post-materialist," since they emphasize elements quite distinct from tangible economic or material positions. Many of the lifestyle and cultural issues fit in here. But the other set involves not something "after materialism," but rather an *enlargement and extension* of materialistic demands. Over the 1960s and 1970s, for examples, Americans in all social and economic positions came to include such objectives as cleaner water and air as among those they wanted to "buy." Environmental concerns, at the more public level, were not "post-materialist"; rather, they were a later-generation material emphasis. (Ladd, 1982:18–19, emphasis in original)

Supporting Ladd's analysis is the study by Mohai (1985). Mohai notes that while there is widespread support for environmental issues, there is, indeed, an upper- and upper-middle-class connection with activists. This is due, however, more to the greater sense of personal efficacy access to resources than to concern about the environment. This fits in with Schattschneider's finding of an upper-class bias in the mobilization system.

The Environmental Justice Movement

There is another way in which Tucker (and others) are incorrect.[4] While African Americans have not been strong supporters of environmental groups and certainly have concerns that outweigh the environment (Taylor, 1989), there is a new movement among the poor and minority groups that emphasizes environmental concern. The new movement is one concerned with environmental justice. It originates in the observation that poor people and minorities are likely to live in communities with high levels of environmental problems. This is made most explicitly in a 1989 report by the United Church of Christ entitled "Toxic Wastes and Race in the United States." The study noted that:

> Communities with the greatest number of commercial hazardous waste facilities had the highest composition of racial and ethnic residents. In communities with two or more facilities or one of the nation's five largest landfills, the average minority percentage of the population was more than three times that of communities without facilities (38 percent vs. 12 percent).
>
> In communities with one commercial hazardous waste facility, the average minority percentage of population was twice the average of minority population in communities without such facilities (24 percent vs. 12 percent).
>
> Three out of the five largest commercial hazardous waste landfills in the United States were located in predominated Black or Hispanic communities. These three landfills, accounted for 40 percent of the total estimated commercial landfill capacity in the nation.
>
> Three out of every five Black and Hispanic Americans lived in communities with uncontrolled toxic waste sites (quoted in Bryant, 1989:50).

A recent study by the Environmental Protection Agency found that minorities suffered disproportionately from air pollution and hazardous waste dump emissions (Suro, 1993). The environmental justice movement thus began on the local level (Suro, 1993). More recently, some of the major environmental groups, such as the Natural Resources Defense Council, and civil rights organizations have joined with local groups to obtain relief. While more clearly can be done, it can no longer be said, if it ever could, that environmental concern and activism was solely a white, upper-class phenomenon.

Recent Studies on Elites and the Environment

Recent studies on elites and the environment have used innovative techniques and made important findings. Howell and Laska (1992) note that what they call the "environmental coalition," those who support strong environmental policy, has changed over the years. Using the National Election Studies, they observe that in the 1970s and early 1980s, age, urban residence, party identification, education, and ideology were strongly related to support for environmental spending (the one question asked in the survey). By 1988, party identification and ideology were less important; education and urban residence had become more important.

Paul Sabatier and his colleagues have done some of the most interesting work on elites and the environment (see Sabatier and McLaughlin, 1988; 1990; Sabatier and Hunter, 1989). Their innovative research, focused on land development issues in the Lake Tahoe Basin, has done much to set the course of elite studies for the 1990s. Sabatier and McLaughlin (1988) explore "the extent of congruence between the beliefs of *different types of elites* and their constituents in a specific policy area" (p. 62). They distinguish among policy elites, as we have done above, the interested/attentive public, and the general public. The second category, the interested/attentive public, is further divided into two subcategories. One consists of the activist constituency; the other, of the constituency that the policy elite claims to represent. The policy elites of interest groups are further divided into those with a strong materialistic concern (normally, economic interests) and those with more idealistic (ideological) beliefs. The other set of groups are government officials and agencies.

Sabatier and McLaughlin (1988) note that policy debates tend to broaden the perspective of participants—they sensitize elites to a wider set of concerns and the negotiating of debates requires justification of one's position. They state that these broadening or "antiparochial" forces (such as elections and policy debates) are more likely to work on governmental elites than on interest group elites. Government elites face, at some level, electoral accountability and are subject to a variety of viewpoints; they are expected to be mediators.

In general, Sabatier and McLaughlin's survey results support their hypotheses. More specifically, government elites have views that correspond better to the views of claimed constituencies than do the views of interest group elites. The studies also support the notion that interest group leaders are more extreme in their beliefs than either their claimed constituency or group members. This was less true for business groups. As noted above, this is a claim made by others in a negative sense. There does seem to be support for this statement, but the result is not unexpected. Jenkins-Smith, Gilbert, and Woods (1991) also show this result.

Sabatier and Hunter (1989) add to the study of elites by exploring causal perceptions. They note that "most studies of both elite and mass belief systems have concentrated on the effects of normative and/or partisan orientations on specific policy issues" (p. 229). They examine causal perceptions within a specific policy area. In this case, they surveyed government officials, interest group leaders and others involved in water issues around Lake Tahoe. They did, indeed, find that the respondents incorporated causal beliefs about the effects of public policy. Why is this important? Sabatier and Hunter feel that unlike the normative elements of belief systems, causal perceptions may change over time because of learning. That is, as policies are put into effect, or there are more analyses of proposed policies, the understanding of the effect of policies will change. Sabatier and Hunter also state that causal perceptions play an important role in the selecting of policy alternatives. This fits in very nicely with the discussion at the beginning of this chapter about the importance of the problem identification step of the policy process.

Sabatier and McLaughlin (1990) conducted an important study of an economic interest group and an environmental interest group in a conflict over land use planning in Lake Tahoe. Their goal was to investigate the agreement ("belief congruence") between leaders of the groups and members. In doing so, they explored three theories that offer predictions of belief congruence. Exchange theory suggests that leaders and groups should generally agree, except under certain situations. Commitment theory suggests that leaders, those most committed to the policy concerns of the interest group, should have more extreme views than their members. The final theory, the moderating elite approach, suggests the opposite of the commitment approach. In general, Sabatier and McLaughlin find that leaders do have greater congruence in their beliefs and hold to them more strongly than group members.

This would seem to confirm Tucker's (1982) and Rothman and Lichter's (1987) view that environmentalists, at least the most active, tend to have an extreme set of values. However, this is not unique to environmental groups, nor to interest groups. Sabatier and McLaughlin (1990) note Republican party activists are generally more conservative than members of the party (rank and file), while Democratic party activists are more liberal than Democratic rank and file. Thus, while the finding of stronger ideological views among interest group elites is interesting, it is not surprising.

Jenkins-Smith, St. Clair, and Woods (1991) test a number of important hypotheses related to elites and policy subsystems. Focusing on the decades-long controversy over energy exploration of the outer continental shelf, they test three hypotheses: (1) that elites in "purposive" interest groups, such as environmental groups, are more likely to maintain their beliefs and policy positions than are elites from "material" interest groups, such as trade associations; (2) when policy conflicts are intense, coalitions on the various sides tend to remain stable; and (3) changes due to elections and other events external to the policy subsystem (Kingdon's [1984] "political stream") lead to change of advocacy coalitions.

To test the hypotheses, Jenkins-Smith, St. Clair, and Wood examined expressed beliefs (publicly stated policy positions) in congressional hearings from 1969 to 1987 over outer continental shelf energy exploration. Employing content analysis of the hearings, they focused on three sets of actors. One set were what the authors called "material" groups. These included energy companies and trade associations: the National Ocean Industry Association, the American Petroleum Institute, the American Gas Association, Exxon and Arco. Four groups were included as part of the "purposive" groups: the Audubon Society, the Sierra Club, the Natural Resources Defense Council, and the Environmental Policy Center. Four government agencies also testified frequently over the outer continental shelf issue: the Departments of Energy and the Interior, the Environmental Protection Agency, and the National Oceanographic and Atmospheric Administration.

In general, the authors find support for all three hypotheses. The environmental actors (purposive groups) maintained their opposition to drilling during the entire period. The material or business groups generally supported drilling but were willing at times to compromise their position in the interests of their members. The government agencies, particularly the Energy and Interior Departments tended to shift their positions. During the latter years of the Carter administration, they took more conservative positions and maintained them throughout the Reagan administration. During this same period, the pro- and antidevelopment groups became more polarized. Changes in the advocacy coalitions were due to changes in agency policy, which as the authors point out, took place largely during the Carter administration.

Conclusion

Much of the work on elites and environmental policy continues to be based on survey research. The Jenkins-Smith et al. (1991) study is unique in using beliefs as expressed in congressional testimony. There are also important case studies, such as Bryner's (1993) work on the 1990 Clean Air Act Amendments, that rely on interviews as well as other kinds of material. But in general, the reliance on survey research to the neglect of other types of studies is both a strength and weakness of the literature.

One very important finding from the work of the last four or five years is that support for environmental policy has strengthened and become less elitist. The environmental justice movement is important in linking concerns of civil rights and antipoverty and environmental groups. The cultural thesis weakens as studies show that poor people are quite likely to be exposed to environmental problems. Additionally, much of the activity in environmental policy occurs at the local level, where the possibility for grassroots activism is enhanced.

We should note that environmental group leaders are somewhat likely to take more extreme positions than their constituents, even more so than business groups with material interests. These are interesting lines of investigation that should be continued. Further work in these areas is needed, beyond very particular studies. For example, while Sabatier and his colleagues have conducted some very important work, their respondents have been limited to the Lake Tahoe area. More comparative studies, and larger studies, are needed to firm up these and other conclusions. Further studies of environmental group leadership and members, both locally and nationally, beyond the few mentioned above, are needed.

Notes

1 Douglas and Wildavsky's (1982) claim that risks to the environment are *perceived* risks that are culturally determined melds with the literature of social constructionism. Social constructionism maintains that there are no objective problems but only definitions of problems made by various stakeholders. Jones' (1984) model of the policy process also fits in here. His distinction between *definition* and *interpretation* within the problem identification phase recognizes the importance of how problems (or risk) are perceived. Lindblom and Woodhouse (1993) also note that policy problems must be interpreted. For a discussion of social constructionism and problem definition, see Rochefort and Cobb (1994).

2 See references in Domhoff, 1983; and Dye, 1990. For a thorough analysis of elite theory, see Parry, 1990.

3 A weakness of the study is that Hunter and Sabatier (1985) offer no objective way of evaluating the strength of different interest groups. While their results do show that the most extreme opponents make the most extreme judgments, the labeling of those judgments as over- or underestimating is a relative one.

4 There is still another way in which Tucker's biases get in the way of his analysis. He attributes much of the success of the 1980 Reagan campaign to a populist revolt against liberals, especially in the West. While there was certainly opposition in the West, known as the sagebrush revolt, that supported the Reagan campaign, the more important issues

were the state of the economy (high inflation and interest rates) and the embassy hostage crisis. At best, the revolt against environmentalism among the working-class population was marginal.

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PART THREE

Environmental Policy Outcomes

11

Evaluating Environmental Policy Outcomes

Evan J. Ringquist

Policy *outcomes* can be defined as the actual impacts of public policies, or "the consequences for society . . . that stem from government action and inaction" (Anderson, 1990:224). For example, the assumption underlying environmental regulation is that these policies will successfully protect and restore environmental quality. Policy analyses that attempt to answer this question ("Do environmental policies work?") are commonly referred to as substantive outcome assessments. Environmental policies, however, may have both intended and unintended consequences for society, outside of their effect on environmental quality. For example, there is little doubt that environmental policies have provided certain public interest groups with a public forum and improved access to government decision making. Environmental policies then can have political outcomes (i.e., they can effect long-term changes in the strength of competing interests). Environmental regulations may also affect the overall efficiency and productivity of the economy, thus having significant economic outcomes.

From a slightly different vantage point, policy outcomes can be understood in opposition to policy *outputs,* which are the statutes produced by legislatures and the administrative actions undertaken by bureaucratic agencies (Levy et al., 1974; Mazmanian and Sabatier, 1989). As the previous chapters in this volume demonstrate, nearly all of the research into environmental policy by political scientists focuses on the conditions surrounding the adoption of these policies or the obstacles to successful implementation of environmental regulations; that is, on the conditions surrounding policy outputs. Ironically, while questions regarding the effectiveness of environmental policies would seem to be a logical target of inquiry, substantive policy outcomes have received the least attention from policy scholars. In fact, with the exception of economic benefit-cost assessments, social scientists rarely evaluate the outcomes of environmental policies.[1]

My objective in this chapter is to discuss research into the outcomes of environmental policy. While the political and economic outcomes of these policies will be touched upon, emphasis is placed squarely on the substantive or environmental outcomes of environmental protection legislation. I begin with a discussion of the political, economic, and substantive outcomes in environmental policy. Next, I discuss the data and modeling obstacles faced by substantive policy analysts in environmental protection. Third, I discuss the literature assessing the effectiveness of environmental regulation. The chapter concludes with suggestions for future research in evaluating the outcomes of environmental policy.

Types of Outcomes in Environmental Policy

Political Outcomes

Political scientists have a comparative advantage in assessing the political outcomes of environmental protection legislation. These outcomes can be grouped into three general categories: effects on political participation, effects on the political power of various groups, and effects on interagency and intergovernmental dynamics. Harris and Milkis (1989) suggest that one of the goals of the "public lobby regime," of which the environmental movement was an integral part, was to open up governmental decision making to greater citizen participation. Public participation in environmental policy making is encouraged through notice-and-comment and public hearing requirements, the provision of policy-relevant information to citizen groups, and the provisions found in many statutes that empower citizens to act as "private attorneys general" in enforcing environmental regulations. A small but growing body of literature suggests that insofar as these policies promote a sense of civic involvement, civic responsibility, and a more involved citizenry, they can be judged successful in terms of political outcomes, regardless of the substantive success of the programs (Dryzek, 1990; Ingram and Smith, 1993).

In addition to encouraging political participation by the general public, environmental policies also affect the political power of established economic interests on the national scene. For example, Ackerman and Hassler (1981) and Navarro (1981) conclude that the most significant outcome of the Clean Air Act amendments of 1977 was protecting the interests of eastern coal mines and labor unions, not improved air quality. Greve and Smith

(1992) suggest that this problem of groups securing significant material and political benefits under the guise of protecting the public interest is not uncommon in environmental legislation. Finally, since nearly all environmental regulation relies upon partial preemption or state primacy in implementation, these programs affect the strength and autonomy of the states vis-à-vis the federal government (Crotty, 1987; Hamilton, 1990).

Economic Outcomes

Of all the outcomes of environmental policies, economic outcomes are the most studied and best understood. If political scientists have a comparative advantage in evaluating the political outcomes of environmental programs, economists have the same advantage in assessing economic outcomes. In this capacity, economists have concluded almost unanimously that the present system of command-and-control regulations is less efficient than a system of market-like incentives for pollution control (e.g., Tietenberg, 1985). The same unanimity is not present, however, when it comes to comparing the costs and benefits of environmental regulation. A fair summarization of the voluminous benefit-cost literature in this area is that the benefits of clean air regulations probably exceed their costs, though there is more disagreement over the benefit-cost ratios of recent state innovations in air quality regulation (Kamieniecki and Ferrall, 1991; Krupnick and Portney, 1991). Estimated benefits and costs in water pollution control regulation are roughly equivalent, but the costs of hazardous waste regulations are said by economists to far exceed the value of the benefits produced (Dower, 1990; Freeman, 1982; 1990; Portney, 1990b). While environmental regulation is costly, most economists conclude that these costs have not significantly reduced industrial productivity, or placed American industry at a competitive disadvantage in the international marketplace (CBO, 1985; EPA Administrator, 1991).

Environmental Outcomes

While the political and economic outcomes of environmental policies are undoubtedly important, the most salient question surrounding these policies might be, do they work? Have air and water quality regulations reduced air and water pollution? Have hazardous waste regulations reduced environmental exposure to hazardous wastes? In short, have environmental regulations improved environmental quality? While this may be the most obvious set of questions surrounding environmental policy, it is also the set that has received the least serious attention from political scientists and economists alike.

There are three reasons why social scientists have shied away from substantive outcome assessments in environmental policy. The first obstacle is data limitations. In several instances, the data required to evaluate the impact of environmental regulations on environmental quality are simply not there, or have only been available for a short time. The second obstacle has to do with modeling limitations. Since natural changes can often overwhelm anthropogenic effects on environmental quality, it is difficult for analysts to isolate the effects of environmental policies.[2] As I show below, however, both of these obstacles to substantive environmental policy evaluations can be overcome.

The final obstacle is that substantive outcome assessments require the analyst to be familiar with the data and conversant with the methods used by physical scientists. Early on, Lynton Caldwell (1970) suggested that the reason political scientists were late to recognize the political significance of the environmental movement was that a gulf separated these scholars from the biologists, chemists, and ecologists producing the physical evidence underlying the movement. To some extent, this same gulf has kept social scientists from undertaking substantive outcome assessments in environmental policy.

Difficulties in Assessing the Impacts of Environmental Policy

Measurement Difficulties

In attempting to measure environmental quality, we face two important decisions: selecting the objects to measure and selecting the method of measurement. In selecting objects to measure, we have to take the general concept of environmental quality and select specific, measurable indicators that we believe adequately represent this concept. The problem is, of course, that there are literally hundreds of constituents that affect environmental quality. Alternatively, we can use more general measures of environmental quality, such as clarity, visibility, smell, and ecosystem health. The gains in information management associated with this strategy, however, are offset by losses in precision of measurement.

The ideal method of measurement would be to use a comprehensive network of accurate and sensitive pollution monitors. Determining changes in environmental quality in this manner is time-consuming and expensive, however, and places real limits on the placement and timing of the measurements. We can also measure environmental quality more subjectively by using the expert judgment of pollution control engineers and program administrators. This method has the benefits of lower costs and increased flexibility, but these benefits come at the price of lower objectivity and accuracy. Both methods of measuring changes in environmental quality are used regularly by government agencies and policy analysts.

Air Quality. Selecting the objects of measurement for air quality is relatively easy. The 1970 Clean Air Act required the Environmental Protection Agency (EPA) to set national ambient air quality standards (NAAQS) for six criterion pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and total suspended particulates (TSPs).[3] For the most part, EPA only collects air quality data for these six criteria pollutants, so legislation dictates how we define air quality.

After selecting the criteria pollutants as our objects of measurement, we still have to choose a method of measuring air quality. One common method is to use total emissions of these pollutants to represent air quality. Using emissions data, however, presents two significant problems. First, the adverse environmental and human health effects of air pollution are associated with concentrations of these pollutants, not emissions, and even the EPA is uncertain about the relationship between emissions and the concentration of pollutants in the atmosphere. Second, the EPA rarely inspects industrial facilities to determine levels of pollutant emissions, so most emission figures are only estimates. In order to calculate these estimates, the EPA uses emission production factor equations that assume a particular industrial process, fuel source, level of fuel consumption, and compliance with pollution control equipment regulations. Air quality measures based on emission figures are only as accurate as these equations.

A second common method of measuring air quality is to use atmospheric concentrations of the six criteria pollutants (the NAAQS for these pollutants are all concentration-based standards). To measure compliance with the NAAQS, the Clean Air Act required the EPA to develop a nationwide network of air quality monitors. In addition to these national air monitoring stations (NAMS), most state environmental agencies have their own networks of state and local air monitoring stations (SLAMS). NAMS and SLAMS constitute a network of over two thousand air quality monitoring facilities, and the measurements taken by these facilities give the most comprehensive picture of air quality available. Even the NAMS and SLAMS network is not infallible, however. By the EPA's own admission, the data gathered by this network were of questionable quality before the mid-1970s. In addition, pollutant concentrations are affected by natural factors, such as sunlight, geography, and temperature inversions, and the NAM/SLAM network cannot distinguish between natural and anthropogenic causes of degraded air quality.

Water Quality. Deciding upon the objects of measurement is more difficult for water quality. As with air quality, there are literally hundreds of constituents that pollute the nation's waters (e.g., nutrients, pesticides, heavy metals). Unlike the Clean Air Act, however, the Clean Water Act does not identify criteria pollutants for water. Thus, it is generally up to researchers to select their indicators of water quality.

Deciding upon the method of measurement is more difficult in water quality as well. The EPA has a nationwide network of water quality monitors, and the data from these monitors are found in the agency's STORET database. The STORET monitors, however, were not set up with the intention of measuring long-term changes in water quality. Rather, the network was created to help identify specific water quality problems requiring agency action. To fulfill this mission, the STORET monitors measure different pollutants at different times, and the monitors themselves are often relocated around the country as a sort of rapid deployment force to evaluate the nature and seriousness of water pollution episodes. While this strategy is crucial if EPA is to identify and control the incidence of acute water pollution, it also means that the agency is unable to answer basic questions like "How has water quality changed over time?" (Wayland, 1993).

A second method of measuring water quality comes from the biennial section 305b reports to Congress, better known as the National Water Quality Inventory Report. This report is actually a compilation of the reports that each state is required to file under the terms of the Clean Water Act. Unfortunately, the states' record in actually filing these reports is pretty spotty. Moreover, for those states that do file their reports, the data are a mix of quantitative and qualitative/impressionistic evaluations of water quality and are of notoriously poor quality. The EPA has recently initiated a program to improve the quality and standardization of the water quality data reported by the states. These improvements are supposed to be in place for the 1994 National Water Quality Inventory Report (Wayland, 1993).

An alternative to EPA's methods of measuring water quality is the U.S. Geological Survey's (USGS) National Stream Quality Accounting Network (NASQUAN). The NASQUAN was established in 1972 to provide the data needed to identify large-scale, long-term trends in the physical and chemical characteristics of the nation's surface waters. NASQUAN monitoring stations are located on larger rivers and streams and measure both the quality and quantity of water moving through hydrologic "accounting units." These stations monitor similar sets of water quality constituents at regular time intervals; thus, the NASQUAN monitors allow us to evaluate changes in water quality over time on those rivers and streams most affected by human activities. Even the NASQUAN is not without its shortcomings. For instance, while there are nearly four hundred NASQUAN monitors, they are not nearly enough to provide a complete picture of water quality trends nationwide. Moreover, there is evidence that the monitors used by NASQUAN may produce biased and unreliable measures of heavy metal concentrations (Windom et al., 1991).

Hazardous Wastes. The objects and methods of measurement pose the greatest problem with regard to hazardous wastes and toxic substances. First of all, there are really no objects of measurement for hazardous wastes. These wastes are true cross-media pollutants, in that they may pollute the air, water, groundwater, and land. We can measure the production of these substances, the amount of these wastes that are recycled or properly disposed of, or the number of hazardous wastes sites cleaned up. None of these, however, are measures of environmental quality. Second, there are few methods of measuring these substances. Before the late 1980s, very few environmental quality monitors were calibrated to identify hazardous wastes or toxic substances. In fact, until the Toxics Release Inventory was created by the 1986 Superfund Amendments and Reauthorization Act (SARA), we had no idea how much of these substances were being released into the environment each year.

Modeling Problems

These problems notwithstanding, environmental scientists are able to produce several fairly accurate measures of environmental quality. Measuring changes in environmental quality, however, is only half the battle when it comes to evaluating the substantive outcomes of environmental policy. While many measures show improvements in environmental quality, it does not automatically follow that environmental regulations are the source of these improvements. There are three basic modeling techniques analysts use to test for causal relationships between public policies and environmental quality: before-and-after models, with-and-without models; and cross-sectional rates-of-change models (Freeman, 1990; Ringquist, 1993).

In using a before-and-after model of regulatory effectiveness, we simply measure pollutant levels before and after some event (e.g., the implementation of the 1970 Clean Air Act), and whatever differences we observe in environmental quality can be attributed to the event. Elegant in its simplicity, the before-and-after model has two significant shortcomings. First, factors other than regulation can affect changes in environmental quality. Increases in any number of economic factors can lead to higher levels of pollution, and regulation may be able to do little more than hold the line against these increases. Thus, before-and-after models of change in environmental quality may underestimate the impacts of regulation. Second, good measures of air and water quality were generally not available before 1970 (since the legislation aiming to improve environmental quality also set up the monitoring systems necessary to measure environmental quality). This makes using the before-and-after method of measuring changes in environmental quality quite difficult.

One alternative to before-and-after models is a with-and-without model of regulatory effectiveness. A with-and-without model tries to control for influences on environmental quality other than those stemming from regulation. Here, the analyst estimates relationships between economic factors and environmental quality before the beginning of the regulatory era. These relationships are then used to estimate what present pollutant levels might be in the absence of environmental regulation. These *predicted* air and water quality levels are then compared with *actual* pollutant levels in the presence of regulation, and the difference between predicted and actual levels is attributed to regulation. There is an obvious trade-off in choosing between before-and-after models and with-and-without models. Using before-and-after models, we risk making errors in measuring change and in controlling for confounding variables, while using with-and-without models can lead to errors in estimating levels of environmental quality. Both types of errors can lead to errors in impact assessment.

Cross-sectional rates-of-change models, a relatively new alternative to before-and-after and with-and-without models, try to include the best of both worlds. Changes in environmental quality are measured using actual data, much like the before-and-after approach, but data measurements begin in the early to mid-1970s. The measure of change in environmental quality then becomes the difference between pollutant levels at the beginning of regulatory era and pollutant levels at the present. Borrowing from the with-and-without method of evaluating the environmental impacts of regulation, we then use both regulatory and nonregulatory variables to model these changes in air and water quality.

The key to the cross-sectional rates of change model is how we account for the effects of regulation. Since we do not have good data for air and water quality before the imposition of federal regulation, a pure before-and-after impact assessment is out of the question. Environmental quality, however, is not affected simply by the presence or absence of regulation. Pollution is also affected by differing *levels* of regulation. In fact, the *stringency* of regulation is more important than the simple presence or absence of regulation when it comes to policy outcomes (Kemp, 1981). There is a good deal of variation in the strength of environmental regulations across political jurisdictions (e.g., states, EPA regions), and comparing these measures of regulatory effort with variations in rates of change in environmental quality across these jurisdictions allows us to identify what effect stronger pollution control regulations have had on environmental quality over time.

Changes in Environmental Quality over Time

Air Quality

By most measures, air quality has improved significantly since the passage of the Clean Air Act of 1970. As table 11.1 makes clear, emissions of the six criteria pollutants show declines of between 3 percent (NO_2) to 97 percent (lead), while atmospheric concentrations of these pollutants show declines of between 24 percent (NO_2 and particulates) to 94 percent (lead). Air quality has also improved significantly in the most polluted urban areas. The California Air Resources Board reported that for the decade 1982–91, there was a 50 percent reduction in the number of hours that locations in the California basin experienced hazardous levels of air pollutants; average peak levels of air pollutants declined 20 percent over this period as well ("A Year of Crucial Decision," 1993). And in 1992, New York City went an entire year without violating the NAAQS for carbon monoxide—the first time this had happened in twenty years ("It's the Ecosystem, Stupid!" 1994). Finally, the average acidity of precipitation declined significantly during the 1980s (U.S. CEQ, 1993).

Clearly, air quality is better today than it was twenty-five years ago. The news surrounding air quality is not all good, however. Nearly all urban areas in the nation exceed safe standards for ozone, and a significant number of air quality regions exceed safe levels for carbon monoxide and sulfur dioxide as well. All totaled, over 100 million people live in areas that routinely fail to live up to NAAQS for one or more criteria pollutants. Even with the improvements in the California basin, concentrations of criteria

Table 11.1 Changes in Air Pollution, Nationwide

Pollutant	Percentage Change in Emissions (1970–73 to 1989–91)	Percentage Change in Concentrations (1974–76 to 1989–91)
Sulfur Dioxide	−22%	−46%
Nitrogen Oxides	−3	−24
VOCs/Ozone[a]	−31	−26
Total Suspended Particulates	−50	−24
Carbon Monoxide	−42	−47
Lead	−97	−94

[a] Emission figures are for volatile organic compounds (VOCs), the main precursors to the National Ambient Air Quality Standards (NAAQS) criteria pollutant ozone.

SOURCE: Calculated from U.S. Environmental Protection Agency, 1992.

pollutants still exceed NAAQS nearly one day in three ("A Year of Crucial Decision," 1993).

Water Quality

Subjective, qualitative assessments have concluded that overall water quality has improved since the passage of the Clean Water Act in 1972. Using a comprehensive survey of state water pollution control officials, the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) reported that over 13 percent of all stream miles in the nation had improved in water quality between 1972 and 1982, while 84 percent had remained the same and only 3 percent degraded in quality (see table 11.2). From these figures, ASIWPCA concluded, "The news is good. The water is cleaner" (ASIWPCA, 1984). Similar conclusions were reached by the EPA in its biennial summarization of state water quality reports (U.S. EPA, 1993). A joint study by the EPA and the U.S. Fish and Wildlife Service, on the other hand, found virtually no change in the water quality of the nation's rivers between 1977 and 1982 (U.S. GAO, 1986a).

Quantitative evaluations of changes in specific water quality constituents have reached more ambiguous conclusions. Researchers at the USGS computed nationwide flow-adjusted trends for two dozen measures of water quality at nearly four hundred NASQUAN monitoring stations from 1974 to 1981, and again from 1978 to 1987 (Smith et al., 1987; Lettenmaier et al., 1991) (see table 11.3). The most significant improvements were associated with dissolved oxygen levels (where stations displaying improving trends

Table 11.2 Changes in State Water Quality, 1972–1982: Percentage of River and Stream Miles Assessed

State	Maintained	Improved	Degraded
Alabama	88%	10%	2%
Alaska	0	0	100[a]
Arizona	88	12	0
Arkansas	90	2	8
California	93	7	0
Colorado	93	5	2
Connecticut	44	53	3
Delaware	59	27	14
Florida	67	25	8
Georgia	98	2	0
Hawaii	0	0	100[a]
Idaho	56	12	32
Illinois	64	35	1
Indiana	98	2	0
Iowa	42	47	12
Kansas	53	20	27
Kentucky	85	10	5
Louisiana	NA	NA	NA
Maine	42	58	0
Maryland	95	3	2
Massachusetts	65	35	0
Michigan	32	36	31
Minnesota	83	17	0
Mississippi	96	4	0
Missouri	98	2	0
Montana	89	10	1
Nebraska	NA	NA	NA
Nevada	100	0	0
New Hampshire	57	41	2
New Jersey	39	48	13
New Mexico	100	0	0
New York	79	21	0
North Carolina	72	28	0
North Dakota	67	33	0
Ohio	88	11	1
Oklahoma	93	0	7
Oregon	78	20	2
Pennsylvania	98	2	0
Rhode Island	91	9	0

Table 11.2 Continued

State	Maintained	Improved	Degraded
South Carolina	36	46	18
South Dakota	92	8	0
Tennessee	78	20	2
Texas	21	59	19
Utah	56	34	10
Vermont	96	3	1
Virginia	NA	NA	NA
Washington	100	0	0
West Virginia	65	34	1
Wisconsin	98	2	0
Wyoming	99	1	0

[a] Based on an assessment of 1 percent or less of total stream miles.

SOURCE: Compiled from ASIWPCA, 1984. Percentage of streams assessed ranges from 1 to 100.

exceeded stations displaying degrading trends by a 3:1 ratio) and phosphorus (where improving trends outnumbered degrading trends nearly 6:1). Still, 84 percent of the monitoring stations displayed no significant trend for dissolved oxygen, and 79 percent displayed no trend for phosphorus. Significant improvements were also found in fecal bacteria counts and sediment loads, while degraded water quality was most often attributed to nitrates, sodium, chloride, heavy metals, and water borne toxic compounds (Lettenmaier et al., 1991; see also Smith et al., 1987). The vast majority of NASQUAN stations showed no statistically significant trends in water pollution.

Other studies corroborate these results. While dissolved oxygen and phosphorus levels in the middle Great Lakes have improved in recent years, chloride and nitrate concentrations continue to increase (U.S. EPA, 1989). Toxic chemical and heavy metal concentrations have improved in certain areas, however. For example, polychlorinated biphenyl (PCB) levels in fish from the Hudson river have declined over 80 percent since 1978 (Faber, 1992). Moreover, Alexander and Smith (1988) concluded that lead concentrations have decreased at nearly two-thirds of NASQUAN monitoring stations, while lead concentrations increased at only 6 percent of the stations.[4] Water quality regulation has only recently addressed toxic substances and heavy metals, so we should not be surprised that more progress has been made with regard to oxygen-demanding pollutants, bacteria, and nutrients.

Table 11.3 Trends for Selected Water Quality Constituents at USGS NASQUAN Stations: 1978–1987

Constituent	Stations with Improving Trends	Stations with Degrading Trends	Stations with No Trend
Fecal Bacteria	87	44	615
Dissolved Oxygen	39	12	265
Nitrogen	24	82	284
Phosphorus	69	12	308
Suspended Solids	19	13	121
Sodium	29	55	309
Chloride	32	65	295
Magnesium	25	76	291
Sulfate	36	34	293

SOURCE: Adapted from Lettenmaier et al., 1991: 333.

Hazardous Wastes and Toxic Substances

Given the difficulties discussed above, the story of changes in environmental quality associated with hazardous wastes and toxic substances is a short one. The best way to estimate changes in environmental quality associated with these substances might be to use total production of hazardous wastes, or the percentage of hazardous wastes disposed of in accordance with Resource Conservation and Recovery Act (RCRA) regulations. Amazingly, we have no good estimates for either of these measures over time.[5]

In the mid-1980s, Congress, the EPA, and environmental groups were troubled by the fact that we had no good estimate of the amount of toxic substances released into the environment. To remedy the situation, Title 3 of the 1986 SARA requires most industrial facilities to record all releases and transfers of toxic substances. The first Toxics Release Inventory (TRI), published in 1990, reported that industry released just over five billion pounds of toxic chemicals directly into the environment during 1987. Another two billion pounds of toxic substances were "transferred," with most of these eventually reaching the environment as well. The most recent inventory, released in the spring of 1994, shows that total toxic releases had declined 39 percent, to just over three billion pounds (see table 11.4). Using these measures, it appears as though we are making progress toward controlling the threats to environmental quality posed by hazardous wastes and toxic substances.[6]

Table 11.4 Environmental Distribution of Toxic Pollutant Releases and Transfers (billions of pounds)

Type of Release or Transfer	1987	1988	1989	1990	1991	1992
Air Emissions	2.71	2.68	2.55	2.30	2.01	1.82
Surface Water Discharges	0.41	0.31	0.19	0.20	0.24	0.27
Underground Injection	1.33	1.34	1.17	0.75	0.71	0.73
Land Disposal	0.73	0.51	0.45	0.44	0.41	0.34
Total Releases	5.18	4.84	4.36	3.69	3.37	3.16
Transfer to POTWs[a]	0.61	0.58	0.56	0.47	0.39	0.38
Transfers to Off-Site Location	1.24	1.03	0.93	0.86	0.27	0.27
Transfers to Treatment	na	na	na	na	0.35	0.39
Transfers to Recycling	na	na	na	na	2.26	2.84
Transfers to Energy Recovery	na	na	na	na	0.44	0.48
Total Transfers	1.85	1.61	1.49	1.33	3.71	4.36
Total Releases and Transfers	7.03	6.45	5.85	5.02	7.08	7.52

[a] Publicly owned (sewage) treatment works.

SOURCE: Compiled from U.S. CEQ, 1993:table 95, p. 417; U.S. EPA, 1994:table 3-6, p. 183.

Evaluating the Effectiveness of Environmental Regulation

Most observers view the changes in environmental quality described above and assume that these changes are the result of environmental regulations, that is, that the substantive outcomes of environmental policy have been positive. These conclusions have been drawn by political scientists, economists, and physical scientists with regard to both air and water quality (Alexander and Smith, 1988; ASIWPCA, 1984; Lettenmaier et al., 1991; Schwarz, 1988; Smith et al., 1987; U.S. CEQ, 1989; U.S. GAO, 1986a). As discussed above, however, correlation does not prove causation. There are several possible explanations for these changes in environmental quality other than regulatory efficacy. Indeed, when investigators have attempted to uncover a causal connection between environmental regulation and improved environmental quality, their research has produced mixed results.

Air Quality

The first before-and-after studies of substantive policy outcomes in air quality concluded that environmental regulations were generally ineffective. Both MacAvoy (1979) and Crandall (1983) recognized that some measures of air quality improved during the 1970s. MacAvoy's analysis, however, concluded that these improvements were completely the result of cyclical changes in industrial activity and a structural shift toward a service-based economy. Air pollution control policy was simply ineffective, since air quality would have improved without these regulations. In examining air quality data before and after the implementation of the 1970 Clean Air Act, Crandall finds that air quality trends improved more rapidly before 1970 than afterwards. These results lead Crandall to conclusions that go further than MacAvoy's: not only are air quality regulations ineffective—they are counterproductive. Other studies produced corroborating evidence for the conclusions of these early researchers. MacAvoy (1987) concluded that the effect of regulation on air quality was dwarfed by the influence of economic factors, while Broder (n.d.) found that investments in pollution control equipment had no effect on atmospheric concentrations of suspended particulates.[7]

While these results suggest that air quality regulations have been generally ineffective, each of the studies discussed above has nontrivial flaws. Both MacAvoy (1979; 1987) and Broder (n.d.) are hampered by short time frames: the effects of environmental regulations can only be identified over long periods of time, but none of these studies have data beyond 1981. The studies also suffer from poor research designs. Crandall (1983) acknowledges that the air quality data before 1970 are spotty and very suspect—but he goes on to use the data anyway. Even more surprising is the fact that Crandall reaches his conclusions regarding the effectiveness of air quality regulation without the benefit of a single statistical test, that is, by "eyeballing" the data. MacAvoy (1979), on the other hand, does provide statistical support for his conclusions, but he represents regulation using a simple dummy variable with no measure of regulatory stringency or effort. Broder (n.d.) and MacAvoy (1987) are more sophisticated, though Broder attempts to evaluate regulatory impact by examining levels of suspended particulates—the one criteria pollutant for which natural sources often exceed anthropogenic sources, and where the impact of regulation will thus be the most difficult to identify.

Research using longer time frames, more innovative research designs, and more fully specified models has come to more positive conclusions regarding the effectiveness of air quality regulations. In an innovative use of Auto Regressive Integrated Moving Average (ARIMA) impact assessment, Box and Tiao (1975) found evidence that mobile source emission regulations had reduced air pollution in southern California. White (1982) extended these results by concluding that the new automobile emission regulations imposed by the Clean Air Act had significantly reduced the

NO_2 emissions across the country. Finally, by employing a cross-sectional rate of change design, Ringquist (1993) found that states with stronger air pollution control programs have experienced greater reductions in SO_2 and NO_2 emissions and concentration levels. Stronger state regulatory programs were less effective at reducing particulate pollution. Thus, while early research suggested that the observed connection between environmental policy and improved air quality was spurious, evidence is mounting that air quality regulations have indeed improved air quality.

Water Quality

The body of literature evaluating the substantive outcomes of water pollution control policy is smaller, and the results less ambiguous, than in air quality. The most useful way to organize this literature is to group together research examining changes in specific end-of-pipe pollution emissions and research examining overall water quality.

Research in the former category has found that water quality regulations have significantly reduced the amount of pollution emitted by industrial and municipal facilities covered by the National Pollutant Discharge Elimination System (NPDES) (EPA Administrator 1991). More specifically, Magat and Viscusi (1990) found that EPA's system of enforcing pollution control regulations has markedly reduced the amount of water pollution produced by the paper industry (traditionally one of the major sources of water pollution). Finally, using a sophisticated before and after design, the General Accounting Office (GAO) set up water quality monitors downstream from four municipal wastewater treatment plants slated for major improvements in their treatment technologies. By monitoring water quality immediately before and immediately after the technology upgrades, the GAO was able to demonstrate that these upgrades reduced water pollution from all four of the plants. In addition, water quality immediately downstream of the plants improved in three of the four cases. Increases from other sources of pollution in the area masked the effectiveness of the treatment upgrade at the fourth plant—a common problem when using before-and-after studies (U.S. GAO 1986b).

While research evaluating the effectiveness of water quality regulations in reducing pollutant effluent is unanimous in concluding success, the literature evaluating the effect water quality regulations have had on overall water quality is equally unanimous in concluding something closer to failure. One Resources for the Future study concluded that estimated changes in water quality since the imposition of the Clean Water Act have resulted in only minor increases in areas suitable for sportfishing (Vaughn and Russell, 1982). A second, more comprehensive Resources for the Future study comes to similar conclusions regarding overall water quality. In a classic with-and-without study, Gianessi and Peskin (1981) found that Clean Water Act regulations had produced only small improvements in dissolved oxygen, phosphorus, and nitrogen concentrations in the nation's waters. Finally, more recent research has discovered that states with stronger and more comprehensive water quality programs have not experienced greater improvements in stream quality at NASQUAN monitoring stations (Ringquist, 1993).

Each of the studies demonstrating the relative impotence of water quality regulation offers the same reason for this impotence—a myopic focus on point sources of water pollution. In the early 1970s, point sources of water pollution (i.e., pollution from industries and municipal wastewater treatment plants) posed a significant problem, contributing over 50 percent of the pollution reaching the nation's waters. By the early 1990s, however, point sources of pollution were generally under control, while largely unregulated nonpoint sources of pollution (e.g., agricultural and urban runoff) were responsible for between two-thirds and three-quarters of all water pollution. This created a situation where the vast majority of regulatory effort is expended to control an ever-diminishing source of water pollution. All substantive outcome analyses of water quality regulation call for increased emphasis on controlling nonpoint sources of water pollution—a process begun by the 1987 Water Quality Act.

Hazardous Wastes and Toxic Emissions

Two pieces of legislation govern nearly all efforts at controlling hazardous wastes and toxic emissions: the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund) and its amendments, and the Resource Conservation and Recovery Act (RCRA) and its amendments. Given the discussion of hazardous wastes and toxic substances presented earlier, there are obvious difficulties in assessing the substantive outcomes of public policy in this area. This is especially true with regard to RCRA, since we have no good time serial measures of hazardous waste contamination. Moreover, we will have to wait several years, if not decades, to evaluate the effectiveness of RCRA's requirements for the safe disposal of hazardous wastes.

The situation with CERCLA is slightly less difficult. We do know that as of December 1993, 1,192 abandoned hazardous waste sites had been placed on the National Priority List. Site clean-ups take, on average, about eleven years, and while only 221 clean-ups were completed by the end of 1993 (with 55 of these sites removed from the National Priority List), environmental quality was significantly better at each of these sites after the clean-up than before. The overall evaluation of CERCLA, however, is that it has been a nearly unqualified failure from economic, political, legal, and environmental perspectives (Dower, 1990; Landy and Hague, 1992; Mazmanian and Morell, 1992; Schmidt, 1994).

Data and measurement limitations may never allow an adequate substantive evaluation of the effectiveness of hazardous waste regulation. The same may not be true for regulating toxic emissions, thanks largely to the annual Toxics Release Inventory required by SARA. The dramatic reduction in the release of toxic chemicals into the environment provides some evidence that indirect regulatory tools that provide information to the public can be effective. Before drawing this conclusion, however, we have to remember three things: first, that these conclusions are based on only six years' worth of data; second, that governmental implementation and citizen use of the community-right-to-know provisions associated with the Toxics Release Inventory have been generally inadequate (Rich et al., 1993); and finally, that while toxic emissions may have declined since SARA, this does not mean that SARA caused these declines.

The Environmental Effects of "Nonenvironmental" Policies

The EPA does not have a monopoly on implementing policies affecting environmental quality. In fact, sometime during the 1990s, expenditures for environmental protection by federal agencies other than the EPA will surpass EPA's expenditures (EPA Administrator, 1991). The actions of the Departments of Energy and Interior obviously affect environmental quality, but an argument can be made that programs administered by the Department of Agriculture (USDA) have the most significant consequences for environmental quality. As mentioned above, nonpoint sources of water pollution are the largest contributors to water quality problems, and agriculture is far and away the largest source of nonpoint source water pollution. Moreover, a majority of state water pollution control officials identify agricultural pollution as the leading reason for not meeting water quality goals. Agricultural activities can also significantly affect air quality, the quality and quantity of wildlife habitat, and exposure to toxic chemicals.

Environmentalists and farmers, long at odds with each other, found common ground in the "sodbuster," "swampbuster," and Conservation

Reserve Program provisions of the 1985 farm bill. The 1990 farm bill extended these programs while adding provisions to prevent environmental damage from agriculture.[8] Some of the best substantive outcome assessments by social scientists have evaluated the environmental outcomes of these agricultural policies. For example, researchers have found that the Conservation Reserve Program provisions of the 1985 and 1990 farm bills have significantly reduced agricultural water pollution (Blackburn et al., 1991) and significantly improved water quality in agricultural regions (Ribaudo, 1989). In addition, while researchers have not been able to uncover a causal connection between the Clean Air Act and levels of atmospheric particulates, Ervin and Lee (1994) demonstrate that the Conservation Reserve Program, conservation tillage, and strip cropping requirements in agricultural policy have significantly improved regional air quality with regard to this same pollutant. Substantive environmental outcomes do not always stem from traditional environmental policies.

Conclusions and Directions for Future Research

We know much more about the substantive outcomes of environmental policies today than we did fifteen years ago. Gains in knowledge in this area can be attributed to improved data quality, more innovative research designs, better data analysis techniques, longer policy histories, and increased interest in substantive policy outcomes on the part of social scientists; but there is still much to learn. Uncertainty still surrounds the effectiveness of some traditional environmental programs. Moreover, new approaches to protecting environmental quality and new databases are emerging every year, providing more opportunities for analyzing environmental policy outcomes. A few of the many promising avenues for future research into the outcomes of environmental policy are presented below.

Directions for Future Research

Nonpoint Source Water Pollution. After decades of neglect, the 1987 Water Quality Act required states to develop nonpoint source water pollution prevention plans based on best management practices in nonpoint water pollution control. In addition, the EPA now requires municipalities with more than 100,000 people to develop and administer a best management practices plan for nonpoint water pollution. Most policy observers expect that these nonpoint source pollution restrictions will be tightened when the Water Quality Act is reauthorized in 1995. Nonpoint source water pollution control regulations, then, are likely to be the next major weapon in the arsenal of environmental protection.

Nonpoint source water pollution control regulations also provide golden opportunities for evaluating policy outcomes. First, nonpoint water pollution controls will have significant political outcomes, since an important political question will be how state and local governments carry out the federal best management practices mandates. Implementation of these mandates has obvious consequences for the autonomy of subnational governments. Moreover, given that nonpoint source regulations take aim at new regulatory targets (e.g., farmers and shopping malls) and that many municipalities are relying upon citizen committees to develop and monitor best management practices plans, the political power of these groups will be affected by these regulations.

Second, full compliance with EPA's proposed nonpoint source regulations may cost hundreds of millions of dollars. Some states are attempting to reduce these costs through nonpoint source pollution trading. In this scheme, pioneered in North Carolina and being implemented elsewhere, point sources of pollution agree to reduce nonpoint source pollution by paying for best management practices on agricultural land, construction sites, and so on. In return, the point sources are exempted from expensive tertiary point source pollution treatment requirements (Letson, 1992). While no trades had taken place by the end of 1993, innovative schemes such as this can affect the economic outcomes of nonpoint source pollution control policy. Finally, keeping in mind the data limitations discussed above, there will be plenty of opportunities to evaluate the substantive outcomes of best management practices plans in nonpoint source pollution control.

Compliance with New Environmental Regulations. Social scientists have studied extensively compliance with traditional environmental regulations (Burby and Paterson, 1992; Hedge et al., 1988; 1991; Magat and Viscusi, 1990; Russell, 1990). The last five years, however, have seen the emergence of new approaches to promulgating and monitoring regulations; regulatory negotiation ("regneg") and indirect regulation through providing information to the media and the public (Gormley's [1989] "catalytic controls"). Regneg techniques involve employing a mediator to hammer out compromises between government officials, environmental groups, and regulated industries in the hopes of avoiding zero-sum regulations. Regneg was pushed extensively at EPA during the Bush administration, and regneg continues at EPA today. Examples of catalytic indirect regulations are the environmental impact statement requirements of the National Environmental Policy Act (NEPA) and the Toxics Release Inventory requirements of SARA. With their obvious potential to affect political relationships, economic productivity and efficiency, and environmental quality, both regneg and indirect catalytic regulations are good candidates for outcome-oriented research.

Other Environmental Impact Assessments. While we have fairly good impact assessments for traditional air and water quality regulations, data are rapidly becoming available that will allow us to do the same type of research for newer environmental policies. For example, the 1990 Clean Air Act requires industries to obtain permits to emit any of 189 toxic chemicals into the atmosphere. These facilities must record their toxic emissions, and their permits limit the amount of these chemicals each facility may emit (much like the NPDES system in water pollution control). Within a few years, we will have enough data to estimate preliminary with-and-without models and cross-sectional rates-of-change models to evaluate the effectiveness of these toxic emissions regulations. Moreover, because many of these data were collected before the imposition of the permit requirements (by the Toxics Release provisions of SARA), we may be able to complete relatively unbiased before-and-after assessments of the effectiveness of these regulations.

Social scientists need to look beyond the EPA, however, when evaluating the environmental outcomes of public policies. We need to take a holistic perspective in our research and recognize that because "everything is connected to everything else," public policies in several areas can have environmental consequences. I have already mentioned the fine substantive outcome assessments evaluating the environmental impact of the sodbuster, swampbuster, and Conservation Reserve Program programs administered by the USDA. Similarly, we might evaluate the effects that nuclear facility clean-ups (administered by the Departments of Defense and Energy) have had on local environmental quality; the effect of national forest timber leasing policies (administered by the Forest Service within USDA) on regional stream water quality; or the effect appliance and building efficiency standards (administered by the Department of Energy) have had on air quality.

Regardless of what type of substantive policy outcome assessments we chose to do, social science researchers need a working knowledge of the biological, chemical, and ecological foundations of these environmental issues. This does not mean that political scientists studying environmental policy need graduate degrees in ecosystem management. As political scientists, we have plenty to offer with our comparative advantage in understanding the political conditions that lead to effective (or ineffective) environmental programs. We do, however, need to improve our ability to use the data and analytic techniques of our physical scientist colleagues. Armed with these abilities, political scientists position themselves to better communicate with specialists in disciplines outside of political science and economics and to offer relevant information in the policy debates surrounding environmental protection.

Notes

1 Charles Howe (1991) suggests that we use six criteria to evaluate environmental policies: economic efficiency, fairness, administrative efficacy, a holistic approach to protecting the environment, emphasis on pollution prevention, and decentralization of program responsibilities. With the exception, perhaps, of fairness, Howe's criteria emphasize policy outputs while neglecting policy outcomes.

2 This modeling problem is not unique to environmental policy analysis. Poverty rates, inflation, and national security are also affected by many things other than public policy. A compounding problem in environmental policy is that these nonpolicy factors are foreign to most social scientists.

3 In 1987, the EPA changed the particulate standard from total suspended particulates to particulate material less than ten micrometers in diameter (i.e., the PM10 standard). These smaller particulates pose the most significant threat to human health.

4 While these results appear to present decreases in lead concentrations as the success story of water pollution control, it is unlikely that these regulations had much to do with reductions in waterborne lead. The most plausible explanation for these decreases in lead concentrations is the restrictions on lead in leaded gasoline that resulted from the Clean Air Act (Alexander and Smith, 1988). Thus, while reductions in lead concentrations in streams and rivers may not be a testimony to the effectiveness of Clean Water Act regulations, they do provide strong support for a more integrated environmental policy that pays particular attention to cross-media pollutants.

5 We can, however, examine other indicators of environmental quality in this area. For example, industrial production of solid wastes in general held steady from 1975–83, though the production of the chemical precursors of hazardous wastes continues to increase. More to the point, perhaps, is that concentrations of benzene and polychlorinated biphenyls (PCBs) in human tissue declined by roughly two-thirds between 1970 and 1983 (U.S. CEQ, 1989).

6 Since EPA has changed the categories within which it estimates transfers of toxic pollutants, the 1992 figures are not comparable with those from 1987.

7 Hanf (1982) found similar evidence of the ineffectiveness of air quality regulations in the Netherlands. In a more comprehensive assessment, however, Knoepfel and Weidner (1982) concluded that air quality regulations had significantly reduced air pollutant emissions in Europe.

8 This is not the place for a discussion of the interstices of agricultural policy. The interested reader might want to peruse examples of the literature in agricultural policy included in the references to this chapter.

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12

Alternative Views of the Environmental Problematic

John S. Dryzek and James P. Lester

The preceding chapters should make it abundantly clear that the environmental problematic is complex and multidimensional. Such complexity breeds variety in problem definitions and diagnoses, projections of environmental futures, evaluations of established means for coping with environmental problems, and prescriptions for policy and politics. Our intent in this chapter is to impose some order on this variety. We shall approach this task through reference to the fundamental worldviews that underpin diverse problem definitions and diagnoses, evaluations, and prescriptions. After enumerating and explicating these worldviews, we shall build upon them to outline several different scenarios for the environmental future. These scenarios constitute the possible contexts within which environmental policy will take effect—and to which the content of this policy should therefore be sensitive (cf. Dryzek, 1983b:357–61). But it should also be remembered that the scenarios could in part be created by environmental policy.

Imposing order is no easy task here. At first sight only a plethora of possibilities is evident, associated with political organizations and movements and environmental intellectuals. Sometimes (and given the policy context, this should come as no surprise) the line between political activism and intellectual cogitation is blurred.

If we begin our exploration with the environmentalists, we find a very broad spectrum. The more conservative wing of extant environmentalism is home to business-sponsored groups such as the Club of Rome and organizations like the Conservation Foundation, which seek an accommodation with industrial society and the cooperation of the captains of industry in controlling pollution and promoting amenity. The environmentalist center is represented by groups such as the Sierra Club and Natural Resources Defense Council, which distrust industry but accept and utilize conventional channels of political action (lobbying, litigation, and campaign financing). More radical groups such as the Committees of Correspondence (representing an incipient Green movement of the sort that flourishes in West Germany) seek a different kind of politics, rejecting both the economic and political institutions of the status quo. Movements such as Earth First! and Greenpeace disdain politics altogether, pursuing direct action to obstruct the loggers of old-growth forests or harass ocean waste dumpers.

Overlying this conservative-radical dimension is variety in substantive concerns. Thus the Wilderness Society cares mostly about natural areas, while People for the Ethical Treatment of Animals is concerned only with the rights of individual creatures. More intricate is variety in the way groups view the environment. So while Friends of the Earth generally espouses a holistic, ecosystems view of man in the environment, the National Wildlife Federation conceives of the environment as a source of fish and game. And while the Sierra Club tends to stress amenity to humans, Earth First! is thoroughly misanthropic.

Of course, not all the political forces active on environmental issues can be located in the environmentalist camp. The opposition includes, not surprisingly, polluting and extracting industry, and—less stridently—labor and agricultural interests, who care more about production and employment than a clean and healthy environment (see Hays, 1987:287–328). Beyond a few industry fronts, there is no antienvironmental interest group as such. However, the proliferating right-wing think tanks, conservative political entrepreneurs, and informal networks such as that surrounding the Sagebrush Rebellion of the early 1980s (which managed to propel several of its members into high federal office) are all active in this area.

The ecologists, economists, philosophers, and political scientists who think and write about environmental issues complicate matters further. A perusal of the journal *Environmental Ethics* will give some idea of the lively debates between partisans of different ethical positions. Some philosphers seek only to extend traditional anthropocentric ethical doctrines (such as utilitarianism, or rights-based reasoning) to environmental affairs (e.g., Goodin, 1983). The rights and interests of future generations are often central in such work (e.g., Sikora and Barry, 1978; Partridge, 1981). These doctrines can even be extended to the entities of the natural world; so Stone (1972) argues that rocks and trees as well as people have rights. But as well as applying human standards to nature, we can also apply nature's standards to humans: so Wilson (1984) argues that biophilia, a love for the environment, is in fact inherent in our genes. It is also possible to discern in nature a source of values such as diversity and homeostasis (Lemons, 1981). Biocentric doctrines argue that nature has inherent value, irrespective of human interests and ascriptions. Deep ecologists, Heideggerians, ecofeminists, eco-Marxists, aesthetes, and eco-anarchists all add to this ferment. Ecological scientists often remind us of the need to take a holistic view of the environment (Commoner, 1972), though some ecologists are happily reductionistic.

The economic and political analyses that draw upon these ethical and scientific positions are equally varied. Some argue that ecological concerns demand a wholly new kind of rationality in policy making (Dryzek, 1983a; Bartlett, 1986). Others feel that more familiar kinds of economic and political rationality are perfectly adequate guides to environmental policy (Baumol and Oates, 1975; McClosky, 1983). The resulting political prescriptions range from totalitarianism (Heilbroner, 1980) to the free market (Simon, 1981) to anarchism (Bookchin, 1982).

How, then, are we to make sense of this variety?

A Typology of Environmental Worldviews

We begin our construction of a typology of environmental worldviews by noting that people concerned with environmental affairs value different things. The two dominant traditions in Western political, social, and economic thought focus, respectively, on the individual and the community. Since the Enlightenment and the Industrial Revolution the individualist tradition has dominated, underpinning both market systems and liberal polyarchy, and, in the academy, contemporary economics and liberal constitutionalist political thought. The communitarian strain is manifested in classical conservatism and various kinds of socialism. Recent ecological concerns suggest that the community of interest can be biological as well as human, and so we can further divide our community category on this basis.

Regardless of where they locate value, thinkers can also be classified according to whether they favor centralized or decentralized solutions to environmental problems. Centralization obviously involves a major role for governmental institutions, and perhaps their consolidation across jurisdictions and functional areas. Decentralization implies suspicion of—and hostility toward—coordinated governmental action.

Combining these two dimensions produces a six-celled typology, which,

		LOCUS OF VALUE		
		Individuals	*Community*	
			Anthropocentric	*Biocentric*
LOCUS OF SOLUTIONS	*Centralized*	Hobbesians and Structural Reformers	Guardians	Reform Ecologists
	Decentralized	Free-market Conservatives	Social Ecologists	Deep Ecologists

Figure 12.1 A Taxonomy of Environmental Worldviews

we contend, captures the major modes of thought on environmental issues in recent years (see figure 12.1). We will discuss each of these six cells, and then outline some uses for this taxonomy.

Hobbesians and Structural Reformers

One of the founders of modern liberal individualism was Thomas Hobbes. Hobbes believed, however, that unchecked individual appetites would lead to a disastrous "war of all against all." The solution, which benefited every individual, was political centralization in the person of an all-powerful sovereign. Hobbes's heirs today apply this logic to environmental problems. In this interpretation, unchecked desires lead to overuse and depletion of natural resources, and excessive pollution. The more prominent contemporary ecological Hobbesians include Garrett Hardin (1968) and Robert Heilbroner (1980), who both propose authoritarian central governance. Somewhat less draconian Hobbesian measures are advocated in Herman Daly's (1977) program for steady-state economics. This program shares the normative individualism of contemporary market economics.[1] Daly envisages stationary levels of population, capital stock, and consumption, secured by a central government issuing birth licenses and depletion quotas for natural resources (which could both be traded). This government would also have to pacify the disadvantaged (no longer able to share in the rewards of growth) by redistributing wealth.

However, avowed Hobbesians constitute a small voice in contemporary environmental discourse. More numerous is a category we call the structural reformers. While generally advocating administrative centralization, these reformers are less apocalyptic in their perceptions than the Hobbesians, and more willing to tolerate the pluralistic aspects of the (liberal individualist) political status quo.

This group of political scientists and moderate environmentalists believes that continued tinkering with decision-making processes will suffice. Thus they typically propose more laws to regulate polluters, more funds for enforcement, and minor structural reforms (Passmore, 1974). Some of them argue that incremental changes in laws and social institutions to incorporate environmental quality into our political tradition are the most that can be hoped for at present (Bond, 1977). These reformers claim to be acting responsibly or realistically, and suggest that "extension, elaboration, and refinement of existing social and political traditions and attitudes" would best serve the environmental cause (Cahn, 1978).

For example, Lynton Caldwell (1974) argues that the development of new structures and procedures of planning and control is essential. A superdepartment of natural resources (a proposal made in the 1960s) would be a step in the right direction (Caldwell, 1974:108).[2]

Similarly, Walter Rosenbaum (1985:299–300) argues that several structural changes would greatly improve the Environmental Protection Agency's capabilities. First, the EPA should be insulated from direct White House manipulation by establishing a five- or seven-year term for the administrator. This arrangement would make it hard for presidents to change leadership quickly. Second, most of the EPA's middle- and upper-management positions, now populated by political appointees, should be made into permanent civil service positions and filled on the basis of professional competence. Third, the agency should have a permanent inspector general with the authority to initiate administrative or legal action against internal abuses of authority. Fourth, the EPA's scientific and technical decision making should be subject to a mandatory five-year review by an external scientific panel, whose mission would be to evaluate the quality of technical information used and determine the degree of independence from political interference.[3]

James Lester and his associates (1983; 1985) established that a consolidated environmental bureaucracy at the state level greatly facilitated the responsible management of toxic wastes. In addition, a centralized structure for environmental policy making was found to promote ocean pollution regulation within the advanced industrial countries of Western Europe (Lester, 1982).

A somewhat different kind of centralizing structural reform has been sponsored by the Conservation Foundation (see, e.g., Leonard et al. 1977). The dialogue with industry which the foundation sponsors might, if institutionalized, establish a kind of environmental corporatism, in which representatives of business, government, and environmental groups together would hammer out coordinated and coherent policy.

Guardians

The proponents of the school of thought we classify as the guardians are more numerous than the Hobbesians, but are no less committed to political centralization. The political power of Plato's guardians was warranted by their philosophical knowledge. Here, we apply the term to any group whose claim to the monopolization of political power is grounded in some special expertise relevant to the determination of what is best for the environmental affairs of the community as a whole. Such claims can be based on scientific and technical knowledge, inherent intellectual capabilities, or ideology. By conventional classifications, the people who make these claims constitute a mixed bag of Marxists, technocrats, and classical conservatives. In the light of environmental concerns, these people turn out to be remarkably similar.

Those who espouse a technocratic guardianship include Alvin Weinberg (1972), who proposes a "permanent priesthood" of nuclear technologists to oversee and operate the vulnerable energy systems vital to society's future. William Ophuls would prefer to entrust political power to ecologists rather than nuclear engineers, and he speaks of the need for a "class of ecological mandarins" (Ophuls, 1977:163). Political ideology—more precisely, subscription to a postindustrial paradigm—is the key for Milbrath (1984), who wants environmental "prophets" to form the "vanguard" in a transition to a new society. Socialist and Marxist environmentalists (e.g., Stretton, 1976; Pryde, 1972) see capitalism as the problem, and the kind of central planning possible under socialism—committed, of course, to ecological goals—as the solution. The Socialist Environmental and Resources Association in the United Kingdom shares this perspective.

The writer who epitomizes the centralized, communitarian approach of the guardians is Ophuls. Though he is not without some Hobbesian proclivities, his favorite political philosopher is Edmund Burke. Burke's classical conservatism venerates an organic society composed for the most part of people with modest appetites and ambitions, governed by aristocrats born to rule. In this idiom, Ophuls disparages "individualistic" political, economic, and social philosophies in favor of "communalistic" alternatives (Ophuls, 1977:151–59), and favors rule by a "natural aristocracy" (pp. 226–27).

Reform Ecologists

Our reform ecologists help populate the mainstream of American environmentalism. For present purposes we may define this category in terms of its intent to give ecological values a voice in the higher (central) levels of the existing political system. The values at issue here are not just the human, individualistic ones of clean air to breathe, clean water to drink, and picturesque scenery to enjoy, but also the biocentric and holistic ones of ecosystem integrity and stability. Obviously, different environmental groups balance anthropocentric and biocentric concerns in different proportions. Biocentric, communitarian concerns weigh rather heavily in Friends of the Earth and the Earth Island Institute, moderately in the Sierra Club and Audubon Society, and hardly at all in the American Lung Association.

Reform ecologists are generally inattentive to the structure of economic and political institutions. This inattention is understandable, given that their intellectual backing comes not from social scientists, but rather from policy-oriented natural scientists. Prominent individuals include Eugene Odum (1983), Barry Commoner (1972), Paul Ehrlich (1968), and Lester Brown (1978). These authors all engage in exhortation on behalf of ecologically sound public policies, be it for wetland preservation, population stabilization, land management, or pollution control. While often constituting challenging and well-publicized contributions to policy debates, these exhortations are of limited interest to policy-oriented social scientists qua social scientists, simply because of their insensitivity to social, economic, and political factors.

Free-Market Conservatives

In contrast to the reform ecologists, our next category, the free marketeers, is highly sensitive to institutional considerations. Three subgroups shelter under this intellectual umbrella: neoconservative regulatory reformers, new resource economists, and cornucopians. They are united by a faith in the essential rationality of self-regulating market systems, understood in terms of a capability to satisfy individual wants (including wants for environmental goods such as clean air). Conversely, they believe that government intervention in environmental problems has gone too far, and in erroneous directions, under the sway of false doctrines. These marketeers prospered amid Reagan-era hostility to federal government; they also captured the intellectual high ground in the early to mid-1980s.

The neoconservative regulatory reformers advocate reduced environmental regulation on the grounds that regulations have meant high costs to business and hence higher inflation (Lester, 1983:12). They further argue that rules which set absolute standards (e.g., the Delaney Amendment, absolute ambient air quality standards) "run the risk of seriously reducing the profitability of many businesses and the entire performance of the American economy" (Williams and Matheny, 1983:79). It is claimed that independent regulatory agencies have become too powerful; and that regulatory agencies (especially the EPA) have become antibusiness as a result of their capture by self-styled public interest groups (Williams and Matheny, 1983:75–76). Thus the reformers argue that regulation should involve less in the way of punitive sanction, and more reliance on market-oriented incentives (e.g., tax credits for the installation of pollution control equipment).

More specifically, Murray Weidenbaum claims that excessive regulation increases paperwork (whose cost decreases capital formation), hurts smaller enterprises, and increases costs to consumers. He concludes that the net effect of regulation is negative: "[T]he cure is worse than the disease" (Weidenbaum, 1979). He would prefer that business receive information and incentives rather than commands and sanctions from government. In short, the goal of environmental policy should be to "free the Fortune 500" from the shackles of government (Weidenbaum, 1983).

The new resource economists (e.g., Stroup and Baden, 1983; Simmons and Mitchell, 1984) attack federal land management policies rather than regulatory practices. They argue that widespread public ownership of land (especially in the American West) leads to inefficiency and abuse, because users of this land, such as logging companies, cattle grazers, and backpackers, push their interests by political means. There is thus an incentive for these users to seek—and for politicians and bureaucrats to grant—benefits in an irresponsible manner; that is, in a fashion insensitive to the total cost to society. For example, it is widely acknowledged that many federal timber sales take place at a net loss to society, for the cost to the Forest Service of constructing logging roads is less than the value of the trees harvested. To new resource economists, the solution is clear: privatization of the public lands. Private owners are disciplined by the market in a way that public land managers and interest groups are not. They have to be sensitive to the costs of their actions, and they will not engage in destructive or inefficient uses of the resources they control (including privatized scenic resources currently in national parks or wilderness areas).

The cornucopian free marketeers have more global aims and analyses. In essence, their argument is that no resource can ever run out if a competitive market order exists to stimulate the development of substitutes. Nor is there any need to worry about population growth, for more people means more problem solvers. And pollution can be ameliorated by technological changes that spontaneously make production cleaner as economies grow. The only possible obstacle to this rosy future is misguided government intervention—for example, of the sort that prolonged the energy crisis of the 1970s by regulating energy prices. The most provocative and prominent salesman of this new cornucopia is Julian Simon (1981; Simon and Kahn, 1984), though many economists share his views about resource availability (e.g., Barnett and Morse, 1963).

Social Ecologists

The free market is not the only kind of decentralized political-economic system. There is also a vision associated with the libertarian left of the political spectrum, which is averse to centralized governance but prefers communal cooperation to competition. In an environmental context this vision is expressed in what we can call social ecology (to distinguish it from the biocentric perspective of deep ecology). The term "social ecology" is used by Murray Bookchin (1980; 1982, 1987), who also describes himself as an eco-anarchist. But we can also apply this term to other proponents of radically decentralized and nonhierarchical social formations, such as ecofeminists (Griffin, 1978; Merchant, 1982) and critical theorists (Dryzek, 1987a; Luke and White, 1985).

Murray Bookchin's many writings spell out the essential features of eco-anarchism. His hostility to the market is unequivocal:

> Any attempt to solve the environmental crisis within a bourgeois framework must be dismissed as chimerical. Capitalism is inherently antiecological. Competition and accumulation constitute its very law of life, a law which Marx pungently summarized in the phrase, "production for the sake of production." Anything, however hallowed or rare, "has its price" and is fair game for the marketplace. In a society of this kind, nature is necessarily treated as a mere resource to be plundered and exploited. The destruction of the natural world, far from being the result of mere hubristic blunders, follows inexorably from the very logic of capitalist production. (Bookchin, 1971:16–17)

The solution, according to Bookchin, is a classless, stateless, and decentralized society of the sort envisioned by socialists and anarchists. But he has no faith in the Marxist-Leninist program of vanguard revolution, seeking instead a spontaneous nonhierarchical transformation from the bottom up. His new society would feature small communities, humanistic technologies, unrepressed sexuality, communal solidarity, individual development, self-discipline, the elimination of toil, and the promotion of craftsmanship (Bookchin, 1971:78). Thus would be accomplished "the reconsideration of nature and human society in a new ecological sensibility and a new ecological society—a reharmonization of nature and humanity through a rehumanization of human with human" (Bookchin, 1982:11).

Ecofeminists share Bookchin's antipathy to hierarchy, but are more specific as to the location of this root of all evils. They claim that patriarchy in human society, or hierarchy based on gender, makes other dominations—including the domination of nature—possible. Thus it is foolish to talk of better environmental policy, or more harmonious, less exploitative relationships with the natural world, unless one first attacks patriarchy. Ecofeminists criticize other environmentalists, especially deep ecologists, for failing to recognize this basic truth (e.g., Salleh, 1984).

Critical theorists take their cue from a critique of modernity and the kind of instrumental and technical rationality it embodies (e.g., Habermas, 1984). They are sensitive to the questions of scale and community that preoccupy other social ecologists. However, they devote most of their attention to the kinds of political relationships that will obtain within and between communities. In this light, ecological values are inevitably unrealized in processes encumbered by the (instrumentally rational) pursuit of individual interest and the exercise of economic or political power. Such values will fare much better in processes built on free discourse among equals (Dryzek, 1987a:200–215; 1987b).

Deep Ecologists

Deep ecologists differ from social ecologists in their relative inattention to and limited interest in human communities. Their avowed locus of value is the biotic community, independent of human ascriptions and purposes. Deep ecology's most well-known proponents are Naess (1973) and Devall and Sessions (1985), though their precursors include Thoreau and Leopold (1949). Contemporary exponents also include Dave Foreman of Earth First! and Fritjof Capra (1987), and literary figures such as Barry Lopez, Gary Snyder, and Edward Abbey. Devall and Sessions portray deep ecology as a loose agglomeration of Eastern spiritualism, the minority tradition in Western philosophy identified by Aldous Huxley, the worldview of American Indians, and scientific (systems) ecology. "Self-realization" and "biocentric equality" are central, but this involves "realization of the 'self-in-Self' where 'Self' stands for organic wholeness" (Devall and Sessions, 1985:255). While calling for "decentralized, non-hierarchical, fully democratic social structures" (Devall and Sessions, 1985:255), deep ecologists favor them for nature's sake, rather than for man's. Devall (1980:315) confesses that "the deep ecology movement does not have a fully articulated political-economic program." It rejects what it calls the "dominant worldview" of the domination of nature, unlimited resources for economic growth, high technology, and anthropocentrism. Yet the movement is not clearly revolutionary, or even clearly political. Some of its adherents advocate and practice a retreat from politics into actions and feelings toward nature that should be embodied in the everyday life of the individual and community. Indeed, deep ecology sometimes verges on a misanthropic denunciation of human rationality in favor of more intuitive or spiritual relationships with nature.

Our typology is now complete, but, like even the best taxonomy, it is not free from gaps and ambiguities. So, for example, we do not recognize biocentric individualists. While of limited political interest, such people do exist, in the form of animal rights philosophers and advocates (e.g., Regan, 1983). Moreover, there are some dimensions of controversy which our taxonomy does not cover. For example, among deep and social ecologists there is a persistent argument over what role—if any—an ecocentric spirituality should play.

Using the Typology

Our taxonomy can be put to work in several ways. First and most obviously, it can be used as a heuristic device to simplify a complex domain and to highlight key differences and similarities among environmental intellectuals. The environmental perspective is clearly not all of one mind, and some profound inconsistencies between different positions (e.g., Hobbesians and social ecologists) are emphasized by our typology. Our classifications define intellectual debate and dispute, but they also relate to real-world political and policy possibilities. We can predict what alliances are likely, and which ones would be fragile, unlikely, or problematical. For example, some of the problems faced by the green movement (now well established in Europe, though just beginning in the United States) stem from its combination of social and deep ecology.

Second, we can employ the taxonomy to chart intellectual and political shifts over time. It is clear that recent years have witnessed a broad movement in the decentralized direction, be it toward the free market or the communitarian designs of social and deep ecologists. Around 1970 more centralized perspectives dominated.

Third, the typology can be used to criticize the work of environmental intellectuals. If a thinker is not readily located in one cell, we should look out for potentially fatal inconsistencies. For example, Ophuls (1977) combines aspects of Hobbesian authoritarianism, communalistic guardianship, and social and deep ecology. While presenting a provocative admixture, Ophuls offers no means for the reconciliation of these disparate parts. Similarly, Lovins (1977) seems to favor both the market and more communitarian decentralized forms. While his presentation is plausible, we might criticize it on the ground that market systems always create imperatives of growth and profit which highly constrain any political-economic mechanisms with which they coexist (Lindblom, 1982). However, we do not rule out the possibility that creative thinking that transcends the categories in our typology may be productive—and even necessary.

Finally, we can employ the taxonomy to inform the construction of scenarios for the environmental future. And it is to this task we now turn.

Environmental Futures: Some Alternative Scenarios

Forecasting is a hazardous endeavor, in environmental affairs no less than elsewhere (note that almost no one predicted the energy crisis of the early 1970s). The scenarios for the next few decades which we enumerate here have some roots in the political and economic status quo, but they also draw upon the diagnoses, evaluations, and prescriptions of the schools of thought discussed in the earlier parts of this chapter. Thus they are not just empirical projections of likely futures. The scenario which obtains can also be determined in part by the choices of policymakers, activists, and citizens—perhaps under the influence of one or more of the perspectives detailed above. Our four scenarios are summarized in table 12.1.

More of the Same: Pluralist Democracy

One very likely possibility is that the status quo will change but marginally. Environmental policy will be negotiated through "interest group liberalism" (Lowi, 1969). More often than not, corporations and business groups will exercise greater influence on policy than environmental groups. Minor structural adjustments may strengthen environmental policy through new laws and more funds for the enforcement of existing laws. Business will continue to argue that the costs of environmental regulation outweigh the benefits to society, and will often succeed in preventing more stringent legislation.

The population of the United States will continue to spread westward

Table 12.1 Alternative Scenarios for the Environmental Future

	More of the Same	Laissez-Faire	Authoritarianism	Radical Decentralization
Worldview	Structural reform	Free market	Hobbesian/guardian	Deep or social ecology
Value Change	None	None	Frugality	Significant and multidimensional
Predominant Approach to Environmentalism	Public involvement	Incentives for private action	Elitist	Citizen involvement
Nature of Public Opinion	Moderate	Free-market conservative	Irrelevant	Radical
Attitudes toward High Technology	Ambivalent	Positive	Ambivalent or negative	Negative
Assumed Availability of Resources	Abundant	Abundant	Scarce	Scarce
Key Actors	Interest groups	Business sector	Technological or scientific elite	Citizens and communities
Institutional Implications	No change	Less government	Strong centralized government	Decentralization of authority
Primary Government Activity	More "end of pipe" regulations, lax enforcement	Deregulation and privatization	Direct control of production, pollution, and resource use; coercive laws and high taxes	Innovative "front end" changes; stringent self-regulation; restructuring of government and production processes

and suburbia will continue to grow. Thus pollution will worsen in the West and Southwest. Problems that are currently acute in the Northeast (e.g., acid rain, hazardous waste) will show up in the Sun Belt.

National policy will focus on the implementation of environmental legislation passed during the 1970s and 1980s. Attempts will be made to generate more resources at the state and local levels, where taxes will increase dramatically in order to pay for clean-up activities. Federal fiscal retrenchment will continue.

Public opinion will favor environmental protection and exhibit a willingness to pay for such activities. At the same time, the public will resist radical institutional restructuring. Thus the EPA, state agencies, state and federal courts, city councils, and citizen advisory boards will continue to function as the primary institutions for dealing with environmental problems.

The status quo model prompts questions about both institutional capabilities and environmental conditions. It presupposes that existing institutions, especially those at the state and local level, are adequate for the task at hand. Although some states have markedly improved their capacity for dealing with environmental problems (Bowman and Kearney, 1986), others remain reluctant to engage these problems in constructive fashion (Lester, 1986). Will environmental conditions improve under this model? While some evidence suggests improvement in some cities of the Northeast (Jones, 1975), other evidence suggests deterioration in cities of the West and Southwest (Ballard and James, 1983). So it remains to be seen whether "more of the same" will result in environmental improvement or deterioration nationwide.

Laissez-Faire

Our second scenario considers what might happen if (some) business dreams were to come true.[4] This laissez-faire model of the environmental future would see a government limited to providing incentives for market actors to restrict pollution and control resources in responsible fashion. For example, the federal government might provide greater tax write-offs for private-sector pollution control expenditures. Washington might also prompt "clean" industries to locate in the Northeast by awarding them federal contracts. Beyond this minimal government constraint, the private sector will be free to determine efficient levels of pollution and rates of resource use. The market will respond by producing innovations to change polluting practices and ameliorate resource shortages.

Again, this scenario inspires several fundamental questions. Will the private sector indeed act responsibly? Can a set of incentives be devised by government to ensure that it does? Will business really internalize all the costs of production, and not impose many of those costs on the environment? Are the world's resources (including energy resources and the assimilative capacity of the environment) really unlimited? (For further discussion, see Dryzek, 1987a:67–87.)

Authoritarianism

Our third scenario is a grim one, rooted in the outlooks of Hobbesians and guardians. It envisages the rise of stringent and coercive authoritarian governance to cope with an environmental crisis by controlling population, pollution, and resource use. Proponents or predictors of this model usually envisage some kind of crisis or collapse precipitating a draconian response.

With extensive centralized planning, many decisions now made by individuals, communities, or the market would be made by government planners. Coercive controls would guarantee implementation, and some mix of incentives and directives would bring individual behavior into line with government objectives. An environmental "superdepartment" would be created at the federal level, and, inasmuch as any decentralized power remained, at the state level too (many states—e.g., New York—already have such a department).

Scenario 3 may not appear very plausible in the individualistic and decentralist American political culture. Moreover, it is far from clear that authoritarian centralization would lead to better environmental policy. The maintenance of central control can be costly in terms of the amount of coercion required; centralized bureaucracies are insensitive to their errors, and unlikely to correct them; and they can easily lose touch with changing conditions (Marcus, 1980:179). Most fundamentally, hierarchically administered systems cannot easily cope with circumstances of variability, uncertainty, and complexity—which almost define the realm of environmental problems (Dryzek, 1987a:88–109).

Radical Decentralization

Our final scenario envisages a massive restructuring of social, economic, and political life, but in a diametrically opposed direction to that of scenario 3. Radical decentralization would embody the preferred future of social and deep ecologists: a human scale in technology, settlement patterns, and institutions, together with cooperative rather than hierarchical or competitive social organization. Communities would regulate themselves rather than be regulated by government, to the extent that it may be hard even to speak of environmental policy as such. However, proponents of this scenario also envisage bioregional authorities and confederal institutions for dealing with supralocal problems (e.g., long-distance pollution).

Along with major institutional transformations, radical decentralization would also require substantial change in social values, away from material consumption and aggressive competitiveness, and toward more cooperative and nonviolent ecological sensibilities. While such transformation might seem unlikely, some analysts (Milbrath, 1984; Cotgrove, 1982; Inglehart, 1977) detect a shift in public values away from material quantity and toward postindustrial concerns related to the quality of life experiences, aesthetics, and community. Irrespective of such incipient shifts in social values, one should not underestimate the resistance of the entrenched capitalist economic system, the individualistic American political culture, and a centralized (if mildly pluralistic) political system.

We should also mention one scenario which is not directly commensurable with the other four (and so does not appear in table 12.1). This scenario is a dystopia of ecological collapse: we overpopulate the planet, exhaust vital resources, and choke on pollution. Our economic and political systems fail, resulting in a barbaric Hobbesian state of nature. Such a prospect seems more remote today than in the early 1970s, when models of doom (e.g., Meadows et al., 1972) were both popular and plausible.

Conclusion

The possibilities enumerated in this chapter are intended to stimulate thinking about the future of environmental politics and policy in the United States (and the developed world more generally). The politics of the environment, and what happens to our ecosystems as a result, will surely be affected by technological change, social forces, economic developments, and the individual values that people hold. But environmental politics, policies, and outcomes lie also within the realm of conscious and collective human choice. We hope that the intelligence with which such choices are made can be improved by a better understanding of the major actors and issues related to environmental affairs that we have sketched here.

Notes

1 Most economists would regard Daly's notions as unorthodox and esoteric, but this judgment holds only through reference to the narrow standards of the economics profession.

2 Although Professor Caldwell was one of the first to make this structural argument, his views have evolved considerably over the past few years. Specifically, he now believes that although structural and procedural innovations are necessary, the primary need is for a fundamental reordering of public beliefs and values. Institutional changes will inevitably follow from such a value change among the citizenry.

3 Other political scientists such as Dean Mann, Phillip Foss, Norman Wengert, Helen Ingram, Michael Kraft, Henry Caulfield, Gregory Daneke, Alfred Marcus, and James Lester have also argued for relatively minor structural changes.

4 Note, however, that many businesses—especially large ones—have a vested interest in government controls that restrict competition. It is noteworthy that Milton Friedman, one of the best-known market advocates, characterizes big business as one of the foremost enemies of the market.

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13

The Politics of Hope: An Eclectic Vision of the Future

Gerald B. Thomas

Adaptive evolutionary transformation in physical systems is slow, unpredictable, and undirectable by humans. Evolution of a social system is likely to be different; humans can participate in and direct social evolution. . . . Intentional efforts to direct and accelerate social change are the most relevant for extricating ourselves from our environmental predicament—Lester W. Milbrath, 1989

Transformational or revolutionary action will be difficult to mobilize—let alone implement—without a set of alternative social goals and practices implied by a different worldview and values informing such action—Joel Jay Kassiola, 1990

In the last thirty years the environmental movement has experienced phenomenal growth in both the scope of issues that it addresses and the depth at which it investigates them. As a result of this multidimensional expansion, the range of prescriptions offered for how humanity should deal with the environmental problematic has become not only more varied but also more polarized. The continuum of prescriptions now ranges from the cornucopians, who believe that, because there is no real environmental crisis, no significant social or political changes are necessary, to the social ecologists, who espouse the radical and violent overthrow of the dominant social paradigm in order to spare the earth from ecological ruin. Table 13.1 depicts a classification scheme suggested by James Lester, which bases the categorization of various schools of thought on ideology and locus of authority, and clearly shows the diversification of perspectives on the environmental crisis.

Given the current status of the environmental movement, it seems tempting to declare that the crisis is well on its way to being solved. Certainly, compared with the not-so-distant past, we are much more aware of the

Table 13.1 Alternative Perspectives on the Environmental Problematic

Locus of Authority	Political Ideology: Left	Political Ideology: Center	Political Ideology: Right
Centralized	Neomalthusians	Structural reformers Reform ecologists Steady state economists	Guardians Hobbesians
Decentralized	Ecofeminists Social ecologists	Native american theologists Deep ecologists Bioregionalists Animal liberationists	Cornucopians Free-marketeers

SOURCE: Lester, forthcoming.

nature of the problem, and we now have a healthy variety of perspectives from which to suggest possible solutions. Yet, there is a growing awareness that the environmental crisis is continuing to worsen, even in the face of a greater recognition and deeper understanding of the problem. Clearly, the information on the environmental problematic that has been collected, processed, and implemented into social policy over the last few decades has failed to elucidate some basic ecological inconsistencies that exist within the current system. The purpose of this chapter is to offer another perspective: a *vision* of where we should go in the future to deal effectively with the environmental crisis.

In the coming years it will be increasingly important to take a holistic approach to problem solving and decision making of all types. In the interest of holism, therefore, the basic tenets of the vision offered here will be drawn from several differing schools of thought that now make up the environmental movement. Inasmuch as these schools have strong and weak points, my main objective will be to retain the strong points of several of the different perspectives in an effort to formulate a workable version of an ecologically sustainable society. The basic tenets of this vision can be summarized as follows:

1. The dominant values of our society lead us to ecologically irrational behaviors. Therefore, we must *replace the current value system* with one that will precipitate ecologically sound practices.
2. The present highly centralized social paradigm is unsustainable. Any version of an ecologically sustainable society must necessarily include a move toward the *decentralization of both production and politics*.

3. Modern society teaches us that we are victims of a reality out of our control. If we are to develop into a society which exhibits ecological rationality, *every individual must become empowered* as a cocreator of reality.
4. *Technology is not inherently destructive.* It is the current system's lack of wisdom in its selection and employment of technology that leads to negative outcomes in the environment.

New Values

The call for a new societal value system is an integral part of several of the schools of thought that now make up the environmental movement. The deep ecology movement, however, is perhaps the most vocal on this account. Values play an integral role in the determination of our motivations, processes, and activities: "Most of society's institutions (organized religions, schools, business firms, governments) operate on the assumption that we already know which values are best; that the main task is to reaffirm or uphold them. . . . If we are to understand our values deeply, and design a sustainable society, we must learn how to reexamine the value structure that was handed to us when we were socialized into society" (Milbrath, 1989:100).

The core values of our society have not evolved in any real sense: they have stood still. This has, in turn, left us with an ecologically and socially unsustainable society. One can view the present value system as a *leftover* from a previous epoch, not discarded because each successive generation of humanity has unquestioningly accepted and propagated those dominant values. According to the deep ecologists, it is evident from the current state of the environment that the present anthropocentric, highly competitive, and materialistic value system is no longer appropriate and, therefore, that it must be replaced by a set of values that will precipitate an ecologically sound social paradigm.

Biocentrism

Deep ecologists, first and foremost, see the current environmental crisis as stemming from the fact that modern man has put himself above nature. As an alternative to such anthropocentrism, deep ecologists offer *biocentrism.* The basic idea behind biocentrism, or *biocentric equality,* is that "all organisms and entities in the eco-sphere, as part of the interrelated whole, are [considered] equal in intrinsic worth" (Devall and Sessions, 1985:67). From this alternative value structure, humanity is viewed as just one part of a whole where no single part is more important than any other. The biocentric value system, with its core belief of equal intrinsic worth, has "the practical implication . . . that we should live with minimum rather than maximum impact upon other species and on the Earth in general" (Devall and Sessions, 1985:68).

An interesting and revealing exercise in creative visualization is to consider, for a moment, what society would look like if we had developed under a biocentric rather than anthropocentric value system—if we had lived our history under the axiom of minimum rather than maximum impact on the Earth: "The environmental/ecology social movements of the twentieth century have been one response to the continuing [environmental] crisis. These movements have addressed some of the problems and have tried to reform some of the laws and agencies. . . . But more than just reform is needed. Many philosophers and theologians are calling for a new ecological philosophy for our time. We believe, however, that we may not need something new, but need to reawaken something very old, to reawaken our understanding of Earth wisdom" (Devall and Sessions, 1985:ix). Some deep ecologists see biocentrism as a value not to be learned, but as one to be remembered. It is important to realize that, in most cases, remembering is easier than learning. In the words of Devall and Sessions (1985:ix), "[A] way out of our present predicament may be simpler than many people realize." Although the logic supporting biocentrism can be justified in more rigorous ways (see Taylor, 1986), the practical implication discussed above, namely that a biocentric outlook does not allow for the exploitation of the Earth, is what makes biocentrism especially relevant to the vision I present here.

Competition and Cooperation

The argument in favor of a highly competitive social system is often based upon the existence of competition in nature. Almost immediately after Darwin postulated his law of the survival of the fittest, the concept began to be applied indiscriminately to a wide range of social activities. In the field of economics, competition holds an especially revered position because economists have proven, through rigorous mathematics, that the existence of perfect competition in a market system will result in efficient outcomes. But, as Milbrath points out, "We often forget that Darwin's principle of 'survival of the fittest' was supplemented by a second principle saying that creatures that learn to cooperate have a better chance of survival" (Milbrath, 1989:310). Martin Lewis, in his well-defended critique of radical environmentalism, *Green Delusions,* states that "an economy based on *cooperative competition* is potentially more powerful *and* equitable than one based on contention alone" (Lewis, 1992:178). Deep ecologists go further, saying that the competitive nature of the present system must be replaced entirely by a society that concentrates upon less individualistic processes such as "mutual aid" and "communalism" (Devall and Sessions, 1985:18).

Although these authors represent different perspectives on the environmental crisis, it is apparent that all of them see the current system as too competitive. It makes intuitive sense that a system that attempts to operate at either end of the competition-cooperation continuum will eventually run into sustainability problems. What is needed, then, is an optimal mix of cooperation and competition, a mix that will allow society to reap the benefits inherent to both approaches. It is a central premise of the vision proposed here that the traditional values associated with a community-centered socioeconomic system, namely a set of values that balances cooperation and competition, must be rediscovered.

Nonmaterialism

The current social paradigm is based upon the idea that "material acquisition is . . . the essential means by which humanity achieves the basic 'non-material' objectives of life such as happiness, self-esteem, social recognition, self-fulfillment, and so on" (Kassiola, 1990:112). If one subscribes to this view, as most of modern society does, unrestrained materialism is not only justified but also necessary, as the only way to achieve happiness. The idea that nonmaterial goals are contingent upon material advancement is a relatively new concept that came out of the industrial revolution (Kassiola, 1990). In fact, the idea "that happiness is to be attained through limitless material acquisition is denied by every religion and philosophy known to man" (Milbrath, 1989:218).

The deep ecology movement suggests that we divorce ourselves from the belief that material acquisition will ultimately lead to the fulfillment of nonmaterial goals. In the words of Devall and Sessions (1985:69), we must ensure that "material goals serve the larger goal of self-realization." Abundance, they contend, is not wrong. We all have a right to enjoy life, and that includes the material aspects of life. The idea is to focus on the quality of life, not simply its quantity. When quantity becomes the driving force behind society, there is never *enough,* as more is always better: "Our vital material needs are probably more simple than many realize. In technocratic-industrial societies there is overwhelming propaganda and advertising which encourages false needs and destructive desires designed to foster increasing production and consumption of goods. Most of this actually diverts us from facing reality in an objective way and from beginning the "real work" of spiritual growth" (Devall and Sessions, 1985:68).

The Earth has the ability to supply every individual alive today with enough material commodities to experience a productive, healthy, and fulfilling life. The key is how the words *productive* and *fulfilling* are defined. If these concepts are defined in terms of quantity, as they are in the present system, then the statement "There are enough resources" is false. All the limits-to-growth literature that exists today has been generated from this perspective. There are, of course, not enough resources in the world to assure every human being in existence a lifestyle of material abundance. The key is that extreme material abundance is not required for a healthy, happy, and fulfilling life: "Thousands of generations of people enjoyed life with only a small fraction of our material goods. Were they less happy than we? We all have inner resources for meditation, conversation, loving, communion with nature, reading, writing, playing music, dancing, and engaging in sports. These talents need to be developed further because our present society lures us to buy and consume, buy and be entertained, buy and be pampered. Those who have given in to those inducements have become more bystanders than participants in life's unfolding drama" (Milbrath, 1989:222).

This is not to deny that a certain level of material abundance is necessary for a fulfilling life. All humans have physical requirements for survival. These requirements can be seen as the minimum of what is required to experience a rewarding life. Material acquisitions above this minimum level should not, however, be viewed as unreasonable or undesirable. It is only those levels of material abundance that draw resources away from individuals who do not have enough to meet the minimum requirement, or that unjustifiably damage the environment, that must be reduced.

There are enough resources to ensure a healthy and fulfilling life for everyone. If the United States alone were to reduce its consumption of beef by just 10 percent, the land freed from the production of cattle would be sufficient to feed one hundred million people (Save the Earth, n.d.). Considering the fact that approximately twenty million people a year die from malnutrition, this is very significant.

Even though there are enough resources to supply everyone's material needs, it is also very important that we stabilize the human population as quickly as possible. The activities of humanity will always have a negative impact on the environment. In order to minimize these impacts, we must work to slow, and eventually stop, the growth of our species. It is not provident to base nonmaterial advancement upon material criteria, and even less well-informed to desire unlimited growth in the production of material goods. In the vision presented here, society's values would be based equally upon spiritual, mental, emotional, and physical criteria: "A basic characteristic of lower wants is that their satisfaction is subject to scarcity and to diminishing returns. If one person gets more of a material good, the other must get less. Nonmaterial values such as knowledge, faith, self-realization, and others are neither subject to diminishing returns nor diminish in quantity when shared with others. Potentially they are infinitely expandable and are not subject to scarcity in the sense that material goods are" (Zinam, 1982:73). From this perspective, growth in physical terms is not complete or desirable without corresponding growth in the other three areas. By making these four elements the primary elements of life, and basing societal values equally upon them, we are once again taking a holistic perspective. With such a value system, we can have unlimited "growth" (progress) and an ecologically and socially sustainable society.

Decentralization

It is apparent from table 13.1 that several of the schools of thought that presently make up the environmental movement include some measure of decentralization in their version of where we should go in dealing with the environmental crisis. In general, the perspectives suggesting decentralization see the present environmental crisis as stemming, either partially or wholly, from the continuing centralization of modern society. In the words of Murray Bookchin, "The terrible tragedy of the present social era is not only that it is polluting the environment but also that it is simplifying natural eco-communities, social relationships, and the human psyche. The greatest danger we face, apart from nuclear immolation, is the homogenization of the world" (Bookchin, 1990a:130). Many environmentalists believe that the homogenization inherent in centralization restricts the natural process of evolutionary change and the benefits derived from that change. From this perspective, if the activities and institutions of society are not allowed to precipitate from a diverse and nonhomogeneous set of environments, then society will not evolve in any real sense but will instead become both socially and ecologically unsustainable.

Bioregionalism, for example, is offered as an alternative to centralization. It is based on the idea that "economic, social and political life should be organized by regions that are defined by nature, not by legislature"

(Milbrath, 1989:211). According to one bioregionalist, "[t]he ecological law with which bioregionalism would logically begin is decentralism, centrifugal force, the spreading of power to small and widely dispersed units. . . . So it is in the natural world, where nothing is more striking than the absence of any centralized control" (Sale, 1985:91). The basic idea behind bioregionalism gains much credibility from the argument that diversity is inherently good. Owing to the fact that our environment is made up of numerous and diverse regions, such a system would give society many nonhomogeneous situations from which to derive its practices and institutions. This would, in turn, assure us that our society would not stagnate, as it has today, into an unsustainable form. In this essay's vision of the future, decentralization plays a role in both politics and production. Inasmuch as bioregionalism presents one of the most holistic and concrete versions of how decentralization could be implemented, much of my discussion will be based on the bioregion paradigm.

Politics

Politics, as it is currently practiced in most modern societies, is too centralized to be responsive to the needs of specific places. Policy outputs that are based on aggregate information fail to take into account the diversity of the specific situations upon which they are applied. The general idea, then, is to transfer decision making to a level where the special needs of specific areas will be considered. One way to achieve this goal is to redefine society around regions that are delineated by nature, so that nature can exert influence over the structures and outputs of political entities (Mills, 1991:41). If the political institutions of a region are based upon natural laws specific to that area, there is little chance that policy outputs will foster activities that would be ecologically incorrect. In the words of Kirkpatrick Sale, "[W]here people know one another and the essentials of the environment they share, where at least the most basic information for problem-solving is known or readily available, is where governance should begin. Decisions made at this level . . . stand at least a fair chance of being correct and a reasonable likelihood of being carried out competently" (Sale, 1985:95).

In its current centralized form, political action is necessarily based on the "majority rules" principle because, in most cases, numerous irreconcilable perspectives are included in the decision-making process. As a result, no universally agreed-upon solution can be formulated. If, on the other hand, political decision making is decentralized to a level where all participants face a fairly homogeneous set of interests and concerns, it is possible to practice consensus politics. With political institutions designed around bioregions, the idea that all individuals involved in political decision making could have homogeneous concerns is quite possible. "The consensus process," writes one proponent of bioregionalism, "is, in its own quiet way, a rejection of all the most familiar forms of political debate and decision making. Because no votes are taken, no majority rules, and no minority is disempowered" (Mills, 1991:42).

Although it is not always possible to achieve a consensus solution to problems, the decentralization of political institutions to the regional level would certainly make consensus solutions more common. One inherent advantage to consensus politics is that once a universally acceptable decision is reached it is more likely to be adhered to in a consistent manner. According to one expert on consensus decision making, "[O]nce you have a unified decision, I'd suggest everyone get out of the way because you can go a long way with very little" (Mills, 1991:42).

The political decentralization proposed here is not meant to be parochial or militantly isolationist. The main goal is to find the correct level of decision making so that nothing is done at a higher level than necessary: "Although the small community should be the basic unit of society they should not be inwardly looking, self-obsessed or in any way closed to the rest of the world. Basic precepts of ecology, such as the interrelatedness of all things . . . should influence community decision-making, and therefore there must be an efficient and sensitive communications network between all communities" (Goldsmith, 1972:53). The idea is to have self-government within bioregions and to have the separate regions connected through an informal *confederation*. The confederation would be based upon the mutual association of several essentially sovereign regions. Inasmuch as there will always be problems that must be dealt with in forums that include several regions, a confederation would be a good way to assure that politics at this higher level would not become hierarchical or domineering, while still allowing for these larger issues to be addressed.

Production

The centralization of production in modern society has helped to create the current environmental crisis by effectively removing the influence of place on decisions concerning production (and consumption). As with centralized political decision making, when production decisions are based upon aggregate information, the bounds that determine ecologically sensible behaviors for specific regions are disregarded. In this way short-term and short-sighted criteria, such as profitability, are used to justify production decisions that are ecologically unsound.

The centralization of production has also added to the environmental crisis by creating an increasingly desperate and dependent workforce. The desperation results from the existence of several trends that make the goal of full employment increasingly unattainable in contemporary society (Milbrath, 1985; Kassiola, 1990). Dependency is established because the system of commodified labor forces individuals to demand employment, instead of demanding work where they can be productive: "The crisis of sustainability to a great extent results from the centralization and scale operating unfettered by effective public constraints, citizen complaints, or private morality. These constraints were eroded as the independent shopkeeper, farmer, and small businessman became employees in enterprises over which they had no control" (Orr, 1992:77). Desperate workers who are dependent on their jobs for survival will accept production decisions that degrade the environment to ensure their continued employment. In such a system, it is argued, "a large automobile firm, such as the Chrysler Corporation, must not be allowed to go bankrupt because we need the jobs, although we do not need the cars" (Milbrath, 1985:199).

Bioregionalism suggests that these problems can be avoided by decentralizing production to the regional/community level. This would, in the words of Kirkpatrick Sale, create an "economy [that] would seek *first* to maintain rather than use up the natural world, to adapt to the environment rather than try to exploit or manipulate it, to *conserve* not only resources but also the relationships and systems of the natural world" (Sale, 1985:69). In other words, decentralizing production to the appropriate level would mean that production decisions would most likely reflect both social and ecological bounds. Socially speaking, such decentralization would help to promote self-sufficiency among the general population. One of the basic tenets of bioregionalism is to promote nondependence (Nichols, 1991). A self-sufficient bioregion, according to one bioregionalist, is healthier and more stable than an economy that is dependent on forces that are generated from outside its borders (Sale, 1985). In the same way, nondependent individuals tend to be healthier and more stable than those who are overly dependent on objects outside themselves.

The idea is to promote the existence of productive situations, where individuals will be able to produce efficiently, not blindly promote economic growth for the sake of jobs. In this way work is seen not as drudgery but as a mode of self-expression and self-discovery. One example of this type of work, called *reinhabitation* by bioregionalists, is putting individuals to work repairing damage done to ecosystems by the activities of humans. From the perspective of the holistic well-being of a bioregion, there can be no greater productive investment than to work to restore and/or maintain the natural balance of that region. In a classic example of reinhabitation, the Mattole Restoration Council and the Mattole Watershed Salmon Support Group were formed in the mid-1980s to repair the Mattole River watershed in the mountains of Northern California. Years of clear-cut logging had removed the natural ground cover from the watershed, thus increasing the sediment load of the river above tolerable levels. This had reduced the population of returning king salmon to a fraction of normal. The council and the support group were formed to plant trees to help keep high sediment loads out of the river. In the words of one participant, "[reinhabitation is] hard work, and gratifying; sometimes cold and wet, other times dusty and sweaty. A finger smashing, back wrenching and occasionally bloody endeavor that blurs the boundary between person and place" (Mills, 1991:56).

In the vision of the future presented here, decentralization is directed toward both politics and production so that decision making happens at the appropriate level. Identifying the correct level at which issues should be addressed will ensure that society's institutions and practices are both holistic and sustainable. Factoring in the ecosystem's limitations, as the bioregionalists suggest, gives society a chance to model its systems after the most efficient and sustainable system known to humanity: the natural world.

Empowerment of Individuals

The present social paradigm dominates both nonhuman and human life. Many of the structures and institutions of modern society serve "to inhibit rather than realize our human potential" (Bookchin, 1990b:35). The first step to winning our personal freedom is to become aware of how the dominator society has enslaved us. One does not have to look very hard to find examples of how the current social system works to disempower individuals. From the allopathic medical system, which takes away the individual's responsibility for his or her disease *and* wellness, to the modern representative political system "where such ideas as grassroots democracy, local control, and power to the people seem impossible," it is very evident that the majority of people no longer consider themselves in control of their lives (Boyte, 1985:9). According to social ecology's most prolific and outspoken proponent, Murray Bookchin, the current ecological crisis has its roots in the "ruthless subjugation of individuals to supra-natural forces beyond human control" (Bookchin, 1982:24). Not surprisingly, Bookchin has postulated that one of the most important prerequisites for solving the ecological crisis is to "[recover] the personal power over social life that the centralized, over-bearing bureaucracies have usurped from the people" (Bookchin, 1980:47).

Growing up in the present system we are, in effect, taught to be victims of a reality that is out of our control. The single most important perceptual shift that any individual can experience is a shift away from viewing life as a passive experience and toward viewing it as a creative process. Empowerment, first and foremost, means that all individuals must realize that their activities and attitudes help to shape "consensus reality." Once you begin to remove yourself from the belief that you merely experience a given reality and begin to truly believe that you cocreate reality—once you empower yourself—you stop concentrating on the causes of society's problems, and start looking for solutions. Empowerment means you need look no further than yourself to find the solutions. In a discussion of the nature of modern politics, one populist writer says that we lack

> institutional places where democratic politics can authentically take place. Such democratic places have to be *created* by the people themselves; they have to *create* the social spaces and then fill them with the appropriate institutional forums through which democratic ideas can be conceived, debated, formulated, and eventually expressed. Unfortunately, the creation of these *self-generated* forums is not understood to be a central component of democratic politics. (Goodwyn, 1986:23, emphasis added)

Goodwyn's emphasis on self-generation and the importance of the creative process in politics is critical. If we are to find our way out of the current ecological crisis, every individual must come to understand his or her place in the creation of positive and lasting change.

The precursors to mass empowerment already exist. The emergence of the not-in-my-backyard (NIMBY) environmental movement in the last decade can be viewed as an empowering movement because it takes "mild-mannered" housewives, school teachers, and factory workers and turns them into knowledgeable and effective participants in the environmental debate (Goldsteen and Schorr, 1991). These people are no longer willing to take a passive role in the way their reality is shaped. Another example of an empowering movement is the resurgence of populism in the 1980s. Populism calls for the return of power to ordinary people, and it has precipitated from the life of actual communities that seek to regain control of the forces that threaten them (Boyte, 1985).

Empowerment does not mean that one must take the entire burden of current environmental crisis upon one's shoulders. On the contrary, this perspective simply leads one to look to the self for answers. In terms of efficiency there is no better place to effect change than from within. Much time and energy has been expended throughout history in attempts to convince others of a need for change. Personal transformation, by comparison, takes minimal effort and involves no interpersonal confrontations:

> If we embark upon such an inner voyage, we may find, upon returning to consensus reality, that our actions on behalf of the environment are purified and strengthened by the experience. We have found here a level of being that moth, rust, nuclear holocaust or destruction of the rain forest genepool do not corrupt. The commitment to save the world is not decreased by the new perspective, although the fear and anxiety which were part of our [original] motivation start to dissipate and are replaced by a certain disinterestedness. We act because life is the only game in town, but actions from disinterested, less attached consciousness may be more effective. (Seed, 1985:244)

The idea of recreating reality gains much relevance when one contemplates how the transformation to an ecologically and socially sustainable system is to be accomplished. The idea here is that there are essentially two reasons why *creating* a new social paradigm will most likely prove easier than attempting to modify the existing one. The first is that the entrenched elites within the current system will simply not allow for a major social change that is directed from below. According to Christopher Manes, "[T]hrough totalized values, organized societies have at their command a medium through which to dictate the kind of human behavior that enhances the power of those in control" (Manes, 1990:229). In this way political elites use cultivated patriotism as a means of perpetuating their control of society, and business elites use the economic growth argument to assure themselves continued command over modern industrial society.

The second reason that we need to create a new paradigm to replace the existing one is that the current system is economically, socially, politically, and ecologically unsustainable. By *unsustainable* I mean that the current system cannot and will not last. The dominant social paradigm contains the seeds of its own demise, therefore it is futile to attempt to change the system through existing institutions; what is needed is an entirely new system with entirely new institutions. The population must create situations where true sustainability can be practiced.

This is not doom and gloom, however, but more a call for quiet celebration and personal preparation. "I understand the Chinese equivalent for the English word 'crisis' means roughly: 'a dangerous opportunity to improve matters'" (Kassiola, 1991:26). The impending socioenvironmental crisis should not be looked upon as a calamity, but as an opportunity to break free of the shackles that we have placed so diligently upon ourselves over the course of human history. We are not all that we can be. It's too bad that we must rely on crises to shake us from our present unsatisfactory state.

The basic idea, then, is to quietly prepare oneself for the changes ahead by becoming empowered and self-realized. For when the system begins its descent into chaos there will be a need for those who are clear within themselves to help those who are not so clear. Those who have bought wholeheartedly into the present system will feel not only intense betrayal but also intense despair, as there will appear to be nowhere to turn. In the future envisioned here, the place to find solutions is within the self.

The greatest service that we can do for society, therefore, is to transform ourselves into people who will be capable of helping others in the coming years; the greatest service we can do for ourselves is to become empowered and self-realized. The general population must come to realize that society needs to be recreated so that each and every individual is allowed to fully develop his or her uniqueness, competence, and creativity. This, according to the social ecologists and the vision I propose, is a necessary prerequisite for solving the environmental crisis.

Appropriate Technology

Many radical environmentalists envision the "perfect" society as one where we return to a primal state, a state where humanity lives much as it did thousands of years ago before the technological revolution. But science and technology are, and will always be, a part of human society. The question is not whether or not we should have technology, but what types of technologies we should develop. In the words of Murray Bookchin, "[M]odern man's capacity for destruction is quixotic evidence of humanity's capacity for reconstruction. The powerful technological agents we have unleashed against the environment include many of the very agents we require for its reconstruction. . . . Without renouncing the gains of earlier scientific and social theories, we must develop a more rounded critical analysis of our relationship with the natural world" (Bookchin, 1982:19–20).

Two of the schools of thought shown in Table 13.1, reform ecologists and the steady state economists, have incorporated the sustainable use of technology into their perspectives on the environmental crisis. Reform ecology is based on the idea that much of the environmental destruction that exists today is a result of a blatant disregard for the natural assimilative capacity of the environment. From this perspective, the solution to the environmental crisis is to factor the physical constraints of the environment into decisions concerning the development and implementation of technology. According to Milbrath, "In contemporary society we glorify science and technology. We forget that they are a means and not an ends. They should not be worshipped and they should not become our masters. . . . [S]ociety should distinguish science from technology; it is always important to learn but not necessarily [important] to do something" (Milbrath, 1989:208). The term *appropriate technology* is often used to describe a general type of technology which serves mankind in a sustainable fashion. In general, appropriate technology is small in scale, decentralized, emits a minimum amount of pollution, does not require extensive consumption of resources, and does not act to subjugate humans (Lewis, 1992).

The benefits of decentralization have been discussed and need not be repeated here. The idea behind the scale requirement is not so much that all technologies must be small in size, but that the scale of development be appropriate for the intended use. For example, a developing nation searching for possible sources of electricity should not build one massive, centralized power plant that produces more electricity than is demanded, but should, instead, work to develop decentralized sources that produce a supply of electricity appropriate to local demand. The development of technology of the proper scale would go a long way toward ensuring that the other criteria associated with appropriate technology (namely, the minimizing of pollution and resource extraction) are met.

In order for appropriate technologies to be developed, scientists and engineers must stop viewing their disciplines as value-free and start incorporating humanistic values into their work (Milbrath, 1985). In other words, those who are involved in the "hard" sciences must soften their approaches to their chosen fields. In modern society, most research and development of new and existing technology is based upon the expected profitability of the project, that is, on financial returns. Profitability is a short-term measure of success, and unless we begin to take the long-term implications of our actions into account, unless we contain our technology within ecological and social bounds, we will in the end be choking on our "progress."

Conclusion

According to this vision of where we must go in the future to deal effectively with the environmental crisis, some major changes are required if we are to reach the ecologically "Good Society." The basic tenets of this vision were taken from several of the schools of thought that currently make up the environmental movement.

Perhaps the most difficult task suggested here, one taken from the deep ecologists, is the replacement of the current anthropocentric, highly competitive, and materialistic value system with one that will lead us to a ecologically benign social paradigm. Another task, the requirement for the decentralization of decision making in politics and production, as suggested by the bioregionalists, would give such decisions at least a chance of reflecting the ecological and social constraints that exist in specific areas. This would, in turn, lead us to a society which would be sustainable in the long run. The empowerment of individuals, as advocated by the social ecologists, would serve to keep individuals from believing that they are helpless in effecting changes to help solve the ecological crisis. Finally, the interjection of humanistic values, of holism, and wisdom into the process of selection, development, and implementation of technology, would work to place technology in the service of humanity in its search for appropriate solutions to the environmental problematic.

Perhaps the greatest utility of my proposal relates more to its approach than its substance. In *Green Delusions: An Environmentalist Critique of Radical Environmentalism* (1992), Martin Lewis suggests that the environmental movement, with its internal fragmentation and often unrealistically radical factions, may itself be partly to blame for the slow progress in the environmental crisis. Inasmuch as this essay has constructed a vision of the future by reviewing, critiquing, and synthesizing several schools of thought that currently make up the environmental movement, it may serve to initiate a trend toward the *productive* integration of the various conflicting perspectives offered concerning the environmental problematic. The general idea is that the sum of the parts may turn out to be more than the whole, and that a synergy of sorts may develop to carry us beyond the current state of affairs. In my mind, this is where the true hope for the environmental and social future of humanity resides.

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Appendix

Selected Statistics on Environmental Policy

The tables A.1–5 have been gathered to facilitate students' investigations into the comparative study of state environmental policy. Basically, two types of data exist: (1) state expenditure data and (2) nonfiscal data on the quality of state environmental programs. From 1969–1980, the Bureau of the Census collected statistics on environmental quality spending in the fifty American states. These reports were issued annually and were entitled *Environmental Quality Control* (Special Studies in State and Local Government). Unfortunately, budget cuts in the early 1980s curtailed this effort (see table A.1). Nevertheless, the Council of State Governments (CSG) has begun an extensive data collection effort on state spending on environmental programs. At present, the CSG has collected data for FY 1986 (see table A.3), FY 1988, and FY 1990. Data for the periods FY 1981–1985 are still missing, as are data for FY 1991–1995.

Other institutions, such as the Conservation Foundation, the Fund for Renewable Energy and the Environment (FREE), and the Institute of Southern Studies have collected nonfiscal and fiscal data on state environmental programs. One of the first such efforts was a study by the Conservation Foundation, which attempted to evaluate the quality of state efforts to protect the environment (see table A.2). Thus, the higher the score, the greater the commitment to environmental protection by the state. In 1987, FREE gathered similar data in order to evaluate the stringency of state environmental protection programs (see table A.4). Finally, the Institute of Southern Studies produced the *1991–1992 Green Index: A State-by-State Guide to the Nation's Environmental Health* (see also chap. 3, table A.5) in order to evaluate state environmental protection efforts. This organization is in the process of updating this survey. Once again, the higher the score, the greater the stringency of the state program (see table A.5).

Some of these data are included here for reference purposes so that the student can obtain a clear picture of their value. Careful researchers will want to update these data when they can, and when they cannot, use the best available data. In addition, students may want to write these organizations directly in order to obtain the complete documents that are referenced here.

Table A.1 State Expenditures for Environmental Quality Control

	1970 Per Capita Expenditure	1980 Per Capita Expenditure	1970–80 Percentage Change
Alabama	$ .46	$ 1.73	276%
Alaska	.51	36.16	6,990
Arizona	.49	4.14	745
Arkansas	.35	2.43	592
California	1.02	8.12	696
Colorado	.52	5.93	1,040
Connecticut	.51	5.65	1,008
Delaware	1.43	38.20	2,571
Florida	.41	1.96	378
Georgia	.50	4.33	766
Hawaii	.53	9.85	1,758
Idaho	.93	6.86	638
Illinois	.18	7.21	3,906
Indiana	.17	4.61	2,612
Iowa	.13	3.01	2,215
Kansas	.36	2.03	464
Kentucky	.72	4.21	485
Louisiana	.69	2.40	248
Maine	.74	7.89	966
Maryland	.67	11.22	1,575
Massachusetts	1.35	11.10	722
Michigan	.30	5.90	1,867
Minnesota	.36	5.69	1,481
Mississippi	.38	1.73	355
Missouri	.28	4.97	1,675
Montana	.77	6.57	753
Nebraska	.23	3.70	1,509
Nevada	.90	4.07	352
New Hampshire	.95	23.01	2,322
New Jersey	.45	5.48	1,118
New Mexico	.57	5.60	882
New York	.72	9.51	1,221
North Carolina	.72	4.32	500
North Dakota	.41	3.46	744
Ohio	.28	35.28	12,500
Oklahoma	.37	2.42	554

	1970 Per Capita Expenditure	1980 Per Capita Expenditure	1970–80 Percentage Change
Oregon	.97	8.78	805
Pennsylvania	.41	4.94	1,105
Rhode Island	.43	12.22	2,742
South Carolina	.60	3.34	457
South Dakota	.39	4.01	928
Tennessee	.16	3.76	2,250
Texas	.49	2.33	376
Utah	.44	2.57	484
Vermont	1.37	13.83	909
Virginia	.66	3.00	355
Washington	.98	9.24	843
West Virginia	.67	6.11	812
Wisconsin	.89	8.40	844
Wyoming	1.06	5.85	452

SOURCE: U.S. Dept. of Commerce, Bureau of the Census, *Environmental Quality Control,* FY 1970; FY 1980 (Numbers 61 and 103).

Table A.2 State Commitment to Environmental Protection, by Ranking Indicator

State	Population, 1980[1]	Expenditure (thousands of dollars)	
			Direct
		Total	Total
Total	225,867,174	1,661,810	1,116,366
Alabama	3,890,061	6,726	6,726
Alaska	400,481	14,483	6,270
Arizona	2,717,866	11,258	11,216
Arkansas	2,285,513	5,546	4,595
California	23,668,562	192,092	113,077
Colorado	2,888,834	17,131	12,541
Connecticut	3,107,576	17,548	9,954
Delaware	595,225	22,739	21,655
Florida	9,739,992	19,119	19,119
Georgia	5,464,265	23,644	12,644
Hawaii	965,000	9,509	9,105
Idaho	943,935	6,480	3,611
Illinois	11,418,461	82,339	30,430
Indiana	5,490,179	25,325	8,850
Iowa	2,913,387	8,773	5,861
Kansas	2,363,208	4,796	4,796
Kentucky	3,661,433	15,403	15,368
Louisiana	4,203,972	10,108	10,006
Maine	1,124,660	8,871	4,171
Maryland	4,216,446	47,324	27,092
Massachusetts	5,737,037	63,657	39,062
Michigan	9,258,344	54,639	23,327
Minnesota	4,077,148	23,194	15,110
Mississippi	2,520,638	4,372	3,988
Missouri	4,917,444	24,428	6,581
Montana	786,690	5,172	4,112
Nebraska	1,570,006	5,804	2,887
Nevada	799,184	3,252	2,204
New Hampshire	920,610	21,187	5,016
New Jersey	7,364,158	40,382	33,554

Expenditure (thousands of dollars)			Per capita expenditure (dollars)		
Direct					
Current operation	Capital outlay	Intergov-ernmental	Total	Direct	Intergov-ernmental
677,078	439,288	545,444	7.36	4.94	2.41
6,725	1	—	1.73	1.73	—
6,128	142	8,213	36.16	15.66	20.51
10,997	219	42	4.14	4.13	.02
4,512	83	951	2.43	2.01	.42
111,101	1,976	79,015	8.12	4.78	3.34
10,602	1,939	4,590	5.93	4.34	1.59
9,600	354	7,594	5.65	3.20	2.44
3,587	18,068	1,084	38.20	36.38	1.82
18,399	720	—	1.96	1.96	—
12,644	—	11,000	4.33	2.31	2.01
2,837	6,268	404	9.85	9.44	.42
3,496	115	2,869	6.86	3.83	3.04
29,371	1,059	51,909	7.21	2.66	4.55
8,672	178	16,475	4.61	1.61	3.00
5,827	34	2,912	3.01	2.01	1.00
4,598	198	—	2.03	2.03	—
14,646	722	35	4.21	4.20	.01
9,976	30	102	2.40	2.38	.02
3,926	245	4,700	7.89	3.71	4.18
24,350	2,742	20,232	11.22	6.43	4.80
26,810	12,252	24,595	11.10	6.81	4.29
22,529	798	31,312	5.90	2.52	3.38
14,775	335	8,084	5.69	3.71	1.98
3,712	276	384	1.73	1.58	.15
6,377	204	17,847	4.97	1.34	3.63
3,705	407	1,060	6.57	5.23	1.35
2,775	112	2,917	3.70	1.84	1.86
2,061	143	1,048	4.07	2.76	1.31
4,763	253	16,171	23.01	5.45	17.57
30,442	3,112	6,828	5.48	4.56	.93

Table A.2 *Continued*

State	Population, 1980[1]	Expenditure (thousands of dollars)	
			Direct
		Total	Total
New Mexico	1,299,968	7,285	3,931
New York	17,557,288	167,031	68,841
North Carolina	5,874,429	25,383	13,560
North Dakota	652,695	2,261	2,261
Ohio	10,797,419	380,976	366,678
Oklahoma	3,025,266	7,319	6,635
Oregon	2,632,663	23,111	13,772
Pennsylvania	11,866,728	58,654	38,859
Rhode Island	947,154	11,576	7,838
South Carolina	3,119,208	10,411	10,109
South Dakota	690,178	2,768	2,684
Tennessee	4,590,750	17,278	14,588
Texas	14,228,383	33,208	32,668
Utah	1,461,037	3,755	3,619
Vermont	511,456	7,075	3,811
Virginia	5,346,279	16,054	15,419
Washington	4,130,163	38,181	14,983
West Virginia	1,949,644	11,906	7,382
Wisconsin	4,705,335	39,524	13,047
Wyoming	470,816	2,753	2,753

Note: The detail for per capita expenditure may not add to total due to rounding.

[1] Bureau of the Census, *1980 Census of Population and Housing*, Advance Reports, PHC 80-V, March 1981, excludes Americans living overseas and the District of Columbia.

Expenditure (thousands of dollars)					
Direct			Per capita expenditure (dollars)		
Current operation	Capital outlay	Intergovernmental	Total	Direct	Intergovernmental
3,737	194	3,354	5.60	3.02	2.58
40,608	28,233	98,190	9.51	3.92	5.59
13,166	394	11,823	4.32	2.31	2.01
1,980	281	—	3.46	3.46	—
21,126	345,552	14,298	35.28	33.96	1.32
6,249	386	684	2.42	2.19	.23
12,198	1,574	9,339	8.78	5.23	3.55
34,404	4,455	19,795	4.94	3.27	1.67
7,324	514	3,738	12.22	8.28	3.95
9,805	304	302	3.34	3.24	.10
2,646	38	84	4.01	3.89	.12
14,303	285	2,690	3.76	3.18	.59
31,244	1,424	540	2.33	2.30	.04
3,102	517	136	2.57	2.48	.09
3,297	514	3,264	13.83	7.45	6.38
14,982	437	635	3.00	2.88	.12
14,777	206	23,198	9.24	3.63	5.62
6,986	396	4,524	6.11	3.79	2.32
12,526	521	26,477	8.40	2.77	5.63
2,675	78	—	5.85	5.85	—

— Represents zero.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Environmental Quality Control,* FY 1980.

Table A.3 State Environmental Expenditures, Fiscal Year 1986

Ranked by Total Environmental Expenditures		Ranked by Per Capita Expenditures		Ranked by % State Environmental Expenditures of Total State Expenditures	
1. California	$1,199,938,000	Alaska	$326.00	Wyoming	15.00
2. Pennsylvania	332,549,763	Wyoming	135.33	Oregon	4.44
3. Wisconsin	260,289,169	South Dakota	75.90	South Dakota	4.31
4. New York	227,274,090	Montana	69.55	California	3.53
5. New Jersey	200,750,000	Wisconsin	55.31	Idaho	3.49
6. Illinois	181,897,000	Idaho	51.97	Montana	3.46
7. Michigan	173,007,900	California	50.70	Alaska	3.00
8. Florida	171,267,941	Oregon	49.01	New Hampshire	2.89
9. Washington	160,334,318	Delaware	47.74	Wisconsin	2.79
10. Alaska	130,973,900	Vermont	42.94	Pennsylvania	2.71
11. Oregon	129,052,806	Washington	38.80	Vermont	2.39
12. Missouri	123,279,074	New Hampshire	32.41	Missouri	1.96
13. Massachusetts	122,313,035	North Dakota	31.08	Washington	1.91
14. Texas	100,921,072	Pennsylvania	28.03	Mississippi	1.83
15. Ohio	92,169,500	New Jersey	27.25	North Dakota	1.82
16. Kentucky	88,448,194	Rhode Island	26.16	West Virginia	1.60
17. Virginia	87,316,466	Missouri	25.07	Delaware	1.57
18. Maryland	85,748,214	Utah	24.60	Kentucky	1.51
19. North Carolina	77,193,938	New Mexico	24.59	Nevada	1.41
20. Minnesota	73,482,950	Mississippi	24.38	New Jersey	1.39
21. Louisiana	73,079,329	Kentucky	24.16	Utah	1.36
22. Tennessee	70,911,499	West Virginia	23.68	Massachusetts	1.32
23. Georgia	68,986,592	Maine	22.31	Colorado	1.30
24. Colorado	64,319,886	Colorado	22.26	Michigan	1.25
25. Wyoming	63,604,967	Nevada	21.77	New Mexico	1.25
26. Mississippi	61,453,623	Massachusetts	21.32	Rhode Island	1.23
27. Alabama	60,252,564	Maryland	20.33	Maine	1.21
28. Montana	54,739,315	Hawaii	19.21	Tennessee	1.18
29. South Dakota	52,450,000	Michigan	18.68	Illinois	1.14
30. South Carolina	50,018,484	Minnesota	18.03	Louisiana	1.12
31. Idaho	49,063,734	Florida	17.57	Nebraska	1.09
32. Iowa	47,090,046	Louisiana	17.38	Iowa	1.07
33. Indiana	46,551,743	Virginia	16.33	Maryland	1.06
34. West Virginia	46,183,752	Iowa	16.16	Virginia	1.04
35. Oklahoma	43,892,933	South Carolina	16.02	North Carolina	1.04

Ranked by Total Environmental Expenditures		Ranked by Per Capita Expenditures		Ranked by % State Environmental Expenditures of Total State Expenditures	
36. Arizona	41,287,553	Illinois	15.92	Alabama	0.99
37. Connecticut	38,666,000	Alabama	15.47	Florida	0.98
38. Utah	35,947,156	Tennessee	15.45	South Carolina	0.97
39. New Mexico	32,046,123	Arizona	15.19	Arizona	0.95
40. Kansas	30,445,137	North Carolina	14.62	Connecticut	0.89
41. Arkansas	30,372,330	Oklahoma	14.51	Arkansas	0.88
42. New Hampshire	29,850,570	Nebraska	13.32	Minnesota	0.88
43. Delaware	28,359,508	Arkansas	13.29	Kansas	0.87
44. Maine	25,096,481	New York	12.94	Oklahoma	0.85
45. Rhode Island	24,767,942	Kansas	12.88	Georgia	0.83
46. Vermont	21,944,786	Georgia	12.63	Hawaii	0.72
47. Nebraska	20,918,705	Connecticut	12.44	Indiana	0.69
48. North Dakota	20,293,798	Ohio	8.54	Ohio	0.60
49. Hawaii	18,540,533	Indiana	8.48	Texas	0.55
50. Nevada	17,413,195	Texas	7.09	New York	0.54

SOURCE: Council of State Governments, *Resource Guide to State Environmental Management* (Lexington, Ky.: Council of State Governments, 1988).

Table A.4 State Commitment to Environmental Protection, by Program

	Air Programs	Soil Conservation Programs	Groundwater Programs	Hazardous Waste Programs	Solid Waste Programs	Renewable Energy & Energy Conservation	Total	Rank
AL	3	3	2	3	3	2	16	26
AK	7	3	3	2	2	1	18	25
AZ	7	3	7	5	2	3	27	19
AR	1	3	2	5	3	4	18	25
CA	10	3	7	9	9	10	48	2
CO	4	6	4	3	4	3	24	21
CT	9	6	9	4	9	7	44	4
DE	1	8	6	3	4	2	24	21
FL	7	4	9	8	6	7	41	7
GA	4	5	7	4	3	3	26	20
HI	4	4	3	2	2	4	19	24
ID	2	1	6	1	2	6	18	25
IL	7	9	5	7	7	6	41	7
IN	6	5	4	6	7	8	36	10
IA	5	10	5	5	7	7	39	8
KS	2	5	8	8	4	2	29	17
KY	7	3	1	6	8	3	28	18
LA	5	3	3	7	2	1	21	23
ME	3	6	7	6	6	8	36	10
MD	3	8	7	6	6	4	34	12
MA	6	4	8	9	6	8	41	7
MI	8	7	8	9	8	3	43	5
MN	5	6	5	9	9	4	38	9
MS	1	3	2	4	2	2	14	28
MO	5	6	7	8	1	4	31	15
MT	2	5	6	3	1	6	23	22
NE	4	6	6	2	6	7	31	15
NV	2	6	4	2	2	7	23	22
NH	6	5	5	7	5	4	32	14
NJ	9	6	7	10	10	5	47	3
NM	1	2	8	5	1	6	23	22
NY	5	5	10	8	8	7	43	5
NC	8	7	8	6	6	7	42	6
ND	1	3	4	2	3	3	16	26
OH	8	8	4	5	5	4	34	12

	Air Programs	Soil Conservation Programs	Groundwater Programs	Hazardous Waste Programs	Solid Waste Programs	Renewable Energy & Energy Conservation	Total	Rank
OK	5	5	5	4	7	3	29	17
OR	6	2	7	5	7	8	35	11
PA	8	6	5	5	3	5	32	14
RI	6	4	6	4	7	3	30	16
SC	6	5	7	5	2	6	31	15
SD	1	8	6	2	2	4	23	22
TN	3	3	4	7	5	7	29	17
TX	7	2	2	5	3	7	26	20
UT	3	4	3	2	1	3	16	26
VT	3	3	5	6	4	7	28	18
VA	8	7	6	2	3	7	33	13
WA	8	1	6	5	5	3	29	17
WV	2	5	2	4	1	1	15	27
WI	9	8	8	7	8	9	49	1
WY	1	3	8	1	2	1	16	26

SOURCE: Scott Ridley, *The State of the States, 1987* (Washington, D.C.: Fund for Renewable Energy and the Environment, 1987).

Table A.5 1991–1992 Green Index

State	Composite Rankings for Sets of							
	Air Pollution (18) Rank	Water Pollution (24) Rank	Energy Use & Production (28) Rank	Transportation Efficiency (10) Rank	Toxic Chemical Waste (13) Rank	Hazardous & Solid Waste (17) Rank	Community Health (12) Rank	Work-Place Health (11) Rank
Alabama	47	38	44	39	36	46	48	46
Alaska	7	30	42	22	5	27	45	22
Arizona	16	19	26	24	21	28	31	27
Arkansas	32	41	45	44	28	36	42	38
California	19	27	16	3	22	13	9	20
Colorado	12	2	20	19	8	4	10	25
Connecticut	40	17	11	8	39	10	3	8
Delaware	38	22	12	18	29	26	26	23
Florida	18	50	28	27	27	2	24	28
Georgia	42	29	21	28	32	42	39	40
Hawaii	2	16	4	6	2	17	2	4
Idaho	1	25	1	45	10	21	30	44
Illinois	41	46	46	13	40	16	34	7
Indiana	50	49	33	17	50	39	28	36
Iowa	23	34	36	39	18	33	7	19
Kansas	17	43	49	46	30	40	6	26
Kentucky	35	34	32	41	41	32	46	30
Louisiana	22	44	50	36	46	31	49	50
Maine	14	8	9	29	14	19	20	17
Maryland	24	12	17	4	18	15	16	5
Massachusetts	43	20	3	2	25	9	4	1
Michigan	33	31	25	14	47	35	21	12
Minnesota	21	21	15	7	20	3	1	6
Mississippi	27	32	39	35	34	41	50	49
Missouri	39	26	34	33	38	11	37	32
Montana	8	11	19	42	13	23	27	37
Nebraska	15	24	41	38	9	14	11	31
Nevada	3	1	7	37	6	34	44	24
New Hampshire	34	5	5	30	16	8	14	16
New Jersey	28	40	23	5	43	29	12	9
New Mexico	9	6	35	47	7	22	35	34
New York	30	15	18	1	24	5	22	2
North Carolina	44	28	27	25	42	30	40	21
North Dakota	11	4	38	48	1	7	18	42
Ohio	49	45	37	15	49	25	29	14
Oklahoma	20	14	43	32	16	47	36	43
Oregon	5	23	6	21	11	1	25	13
Pennsylvania	46	37	31	9	44	38	19	11
Rhode Island	26	8	2	11	23	6	17	3
South Carolina	29	18	29	20	33	50	43	33
South Dakota	6	10	10	49	3	24	41	45
Tennessee	48	47	24	43	48	43	38	35
Texas	24	36	48	26	45	48	33	48
Utah	30	3	22	16	26	49	5	47
Vermont	4	7	8	30	4	18	13	15
Virginia	37	42	30	23	37	44	32	29
Washington	13	33	13	10	12	12	15	18
West Virginia	45	48	40	34	35	45	47	39
Wisconsin	36	39	13	12	31	20	8	10
Wyoming	10	13	47	50	15	37	23	41

SOURCE: Bob Hall and Mary Lee Kerr, *1991–1992 Green Index* (Washington, D.C.: Island Press, 1991).

Indicators (number of indicators in parentheses)

Agricultural Pollution (14)	Forestry and Fish (13)	Fun & Life Quality (19)	Green Conditions (179)		State Policy Initiatives (73)	Leadership in Congress (4)	Green Policies (77)		Total Green Index (256)	
Rank	Rank	Rank	Score	Rank	Rank	Rank	Score	Rank	Score	Rank
11	27	43	5,446	47	48	46	3,212	49	8,658	50
48	1	1	4,130	18	46	47	3,043	47	7,173	34
50	12	27	4,540	26	38	44	2,802	39	7,342	35
25	19	16	5,123	40	50	34	3,230	50	8,353	48
49	48	22	4,167	19	1	16	764	1	4,931	4
42	25	17	3,780	10	26	27	2,330	26	6,110	16
9	45	49	4,258	23	4	8	1,225	4	5,483	11
39	48	19	4,560	27	25	7	2,261	25	6,821	24
30	23	24	4,716	30	11	28	1,604	13	6,320	18
28	28	36	4,983	38	30	36	2,505	29	7,488	39
34	44	25	3,283	1	24	15	2,239	24	5,522	12
45	2	13	3,805	11	36	49	2,708	36	6,513	19
41	39	46	5,187	42	18	21	1,865	17	7,052	31
27	36	50	5,607	49	27	26	2,332	27	7,939	43
43	33	33	4,700	29	17	19	1,841	16	6,541	20
44	41	44	5,254	43	29	32	2,478	28	7,732	42
8	25	30	5,069	39	34	38	2,625	33	7,694	41
38	37	34	5,739	50	33	45	2,644	34	8,383	49
4	17	7	3,646	4	6	3	1,246	5	4,892	2
15	28	35	3,925	14	15	10	1,660	15	5,585	13
7	24	41	3,699	6	9	1	1,377	9	5,076	6
22	35	31	4,745	32	12	11	1,552	11	6,297	17
47	16	3	3,695	5	7	9	1,305	7	5,000	5
36	22	32	5,283	44	45	50	3,016	46	8,299	47
12	34	21	4,824	33	23	29	2,182	23	7,006	30
26	7	6	4,013	15	32	20	2,533	31	6,546	21
46	40	20	4,491	24	28	43	2,510	30	7,001	29
20	30	9	3,753	9	44	35	2,917	43	6,670	22
3	15	38	3,749	8	21	17	2,054	20	5,803	15
28	47	40	4,640	28	3	6	1,150	3	5,790	14
16	10	14	4,200	20	37	42	2,798	38	6,998	28
30	42	39	4,073	17	8	12	1,346	8	5,419	8
19	20	28	4,899	37	16	33	1,873	18	6,772	23
30	38	10	4,071	16	39	25	2,762	37	6,833	25
18	50	48	5,401	46	19	24	2,010	19	7,411	37
12	46	18	4,731	31	42	40	2,913	42	7,644	40
10	14	5	3,487	3	2	13	1,096	2	4,583	1
14	32	42	4,847	34	20	22	2,058	21	6,905	26
17	21	45	3,721	7	10	2	1,384	10	5,105	7
21	18	26	4,870	35	31	30	2,537	32	7,407	36
33	3	2	3,811	12	49	23	3,154	48	6,965	27
6	31	23	5,308	45	41	31	2,843	40	8,151	45
35	43	47	5,538	48	35	37	2,659	35	8,197	46
24	5	11	4,234	22	40	48	2,888	41	7,122	33
4	13	12	3,343	2	14	4	1,578	12	4,921	3
2	6	37	4,874	36	22	39	2,181	22	7,055	32
40	8	8	3,867	13	13	14	1,606	14	5,473	9
1	4	29	5,166	41	47	18	2,951	45	8,117	44
22	8	15	4,217	21	5	5	1,261	6	5,478	10
37	11	4	4,521	25	43	41	2,924	44	7,445	38

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